Southern California's Computer Magazine
Mar. 2, 1992 • 93
FREE

MicroTimes™

Clones: The Next Ten Years

PC Hardware Vendors Change Strategies For New Markets

Allen Yu: "It's a cycle—you need to change. People are well educated—the computer is their tool. Even a family or a small business can't survive without a computer. We have to make it more simple for them." Story starts on page 44

(front to back)
Allen Yu, Peter Lai, and
Joseph Bentzel of CompuExpo

Stranger Than Truth: Dvorak On MicroSoft

"GATES: My conditioned response electro-probe is what makes this company the biggest company in the world. We have to be on the same team. My thoughts have to be your thoughts." Story starts on page 146

NeXT In The Real World

The MicroTimes Interview With Steve Jobs, Part 2

"'Which chip are you using?' and 'Which version of UNIX do you have?' are the battlegrounds of five years ago. It really mattered what chip you used five years ago. It really mattered what version of UNIX you had five years ago. Those things are not the battlegrounds of today." Story starts on page 52

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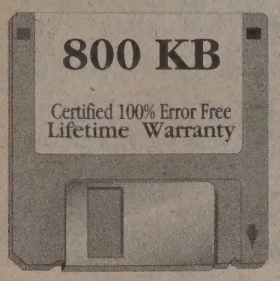

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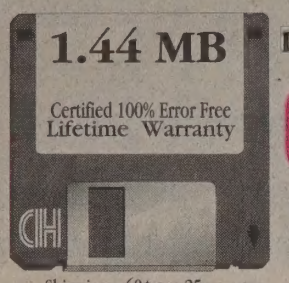

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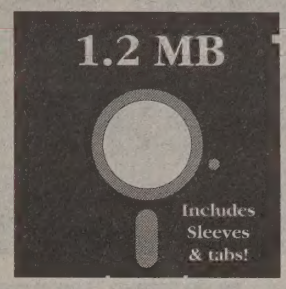

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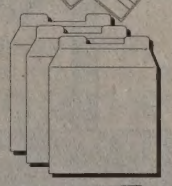

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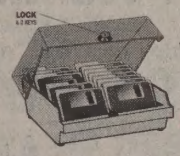

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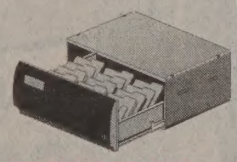

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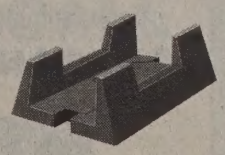

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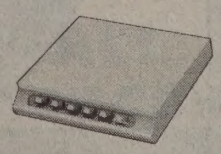

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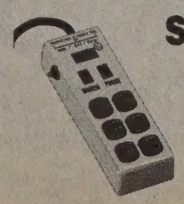

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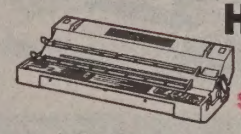

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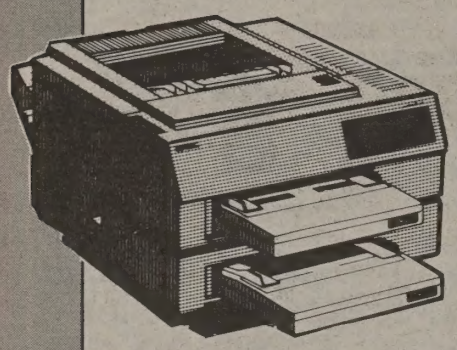

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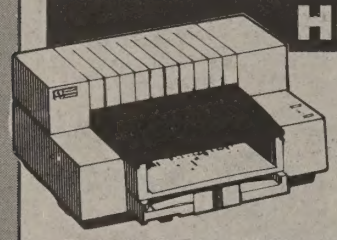

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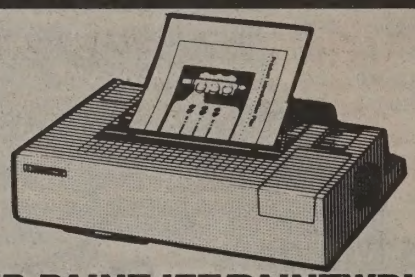

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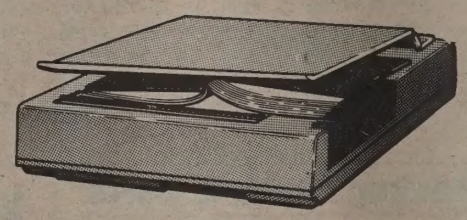

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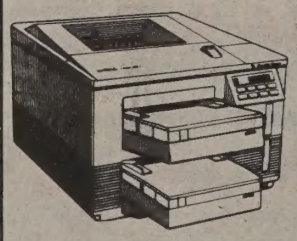

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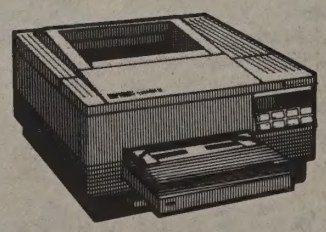

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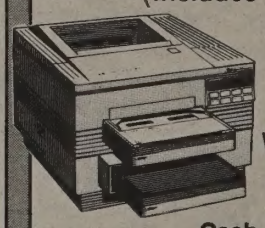

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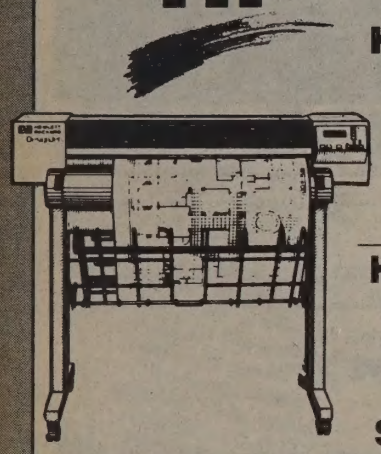

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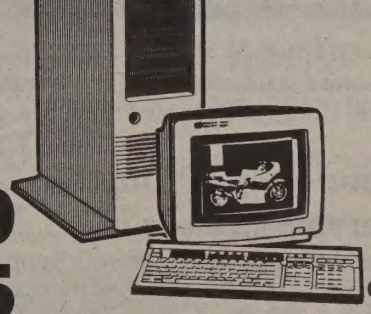

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MICROTIMES™

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Little did IBM know, when it unleashed the PC on an unsuspecting populace, the degree to which it would change the face of computing forever. One particularly unexpected consequence was the growth of the PC clone industry, which in ten years has gone from merely copying existing technology to providing sophisticated solutions for demanding customers. In our cover story, starting on page 44, some of today's successful clone vendors discuss some of the problems and opportunities facing their community.

And in other news, Steve Jobs continues to expound his vision for a brave NeXT world, starting on page 52. Now that NeXTstep's being ported to Intel, it might be showing up on a clone near you Real Soon Now.

—ME

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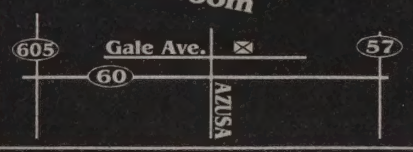

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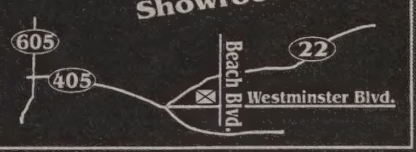

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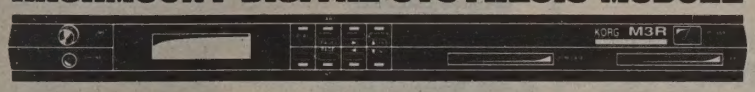

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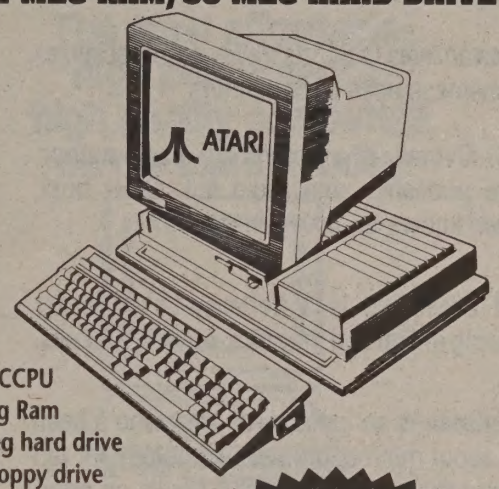

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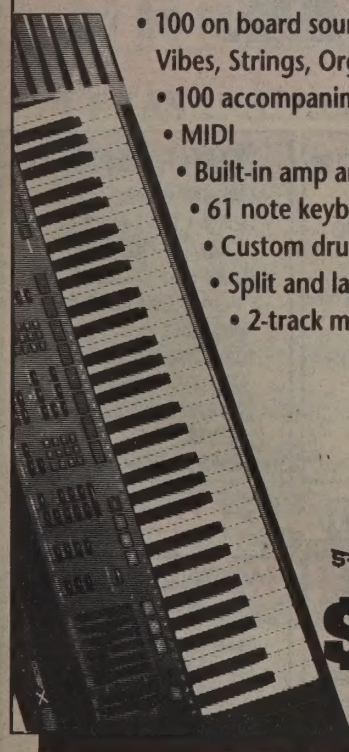

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CONTRIBUTORS

John Perry Barlow is a cofounder of the Electronic Frontier Foundation, a lyricist for the Grateful Dead, a contributing editor of *MicroTimes*, *NeXTWORLD*, and *Communications of the ACM*.

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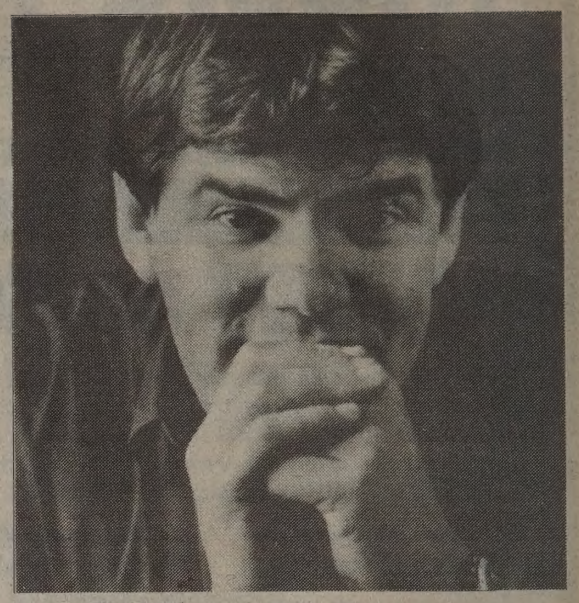
Jim Warren, no stranger to stirring things up, is a member of Autodesk's board of directors and the founder of many industry institutions from the Computer Faire to *InfoWorld*.



Credit Where It's Due

It's recently been brought to our attention that the photo of Philippe Kahn that appeared on our January cover was taken by Chuck Gathard, photographer at *Upside* magazine, where the photo originally appeared. We're delighted to be able to give it proper attribution—and we also recommend *Upside* to the attention of our readers. (*Upside* can be reached at 415/377-0950.)

–eds.

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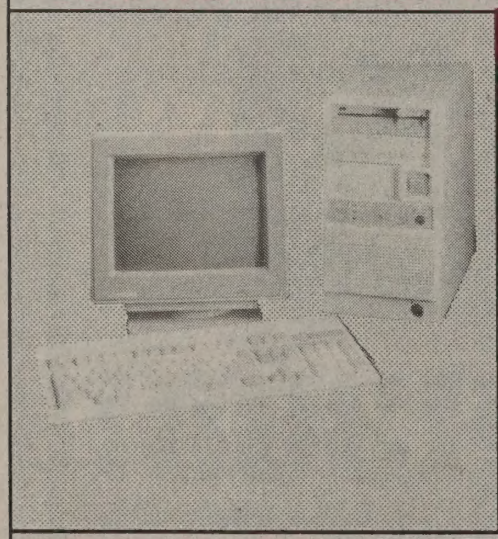

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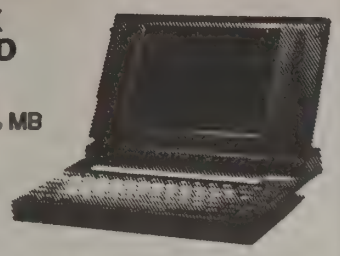

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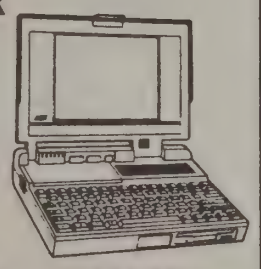

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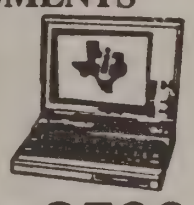

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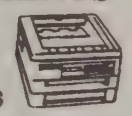

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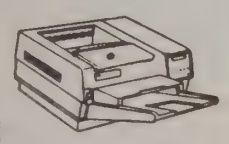

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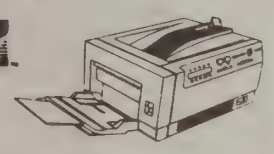

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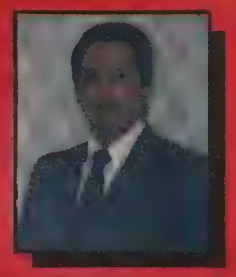

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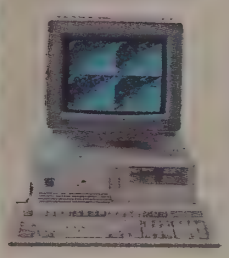

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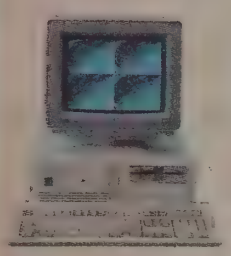

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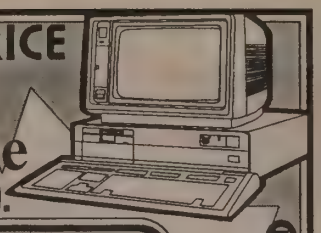

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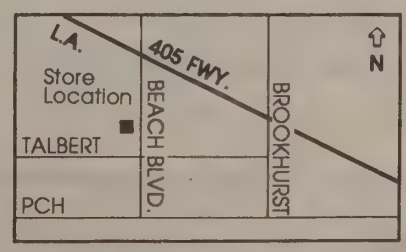

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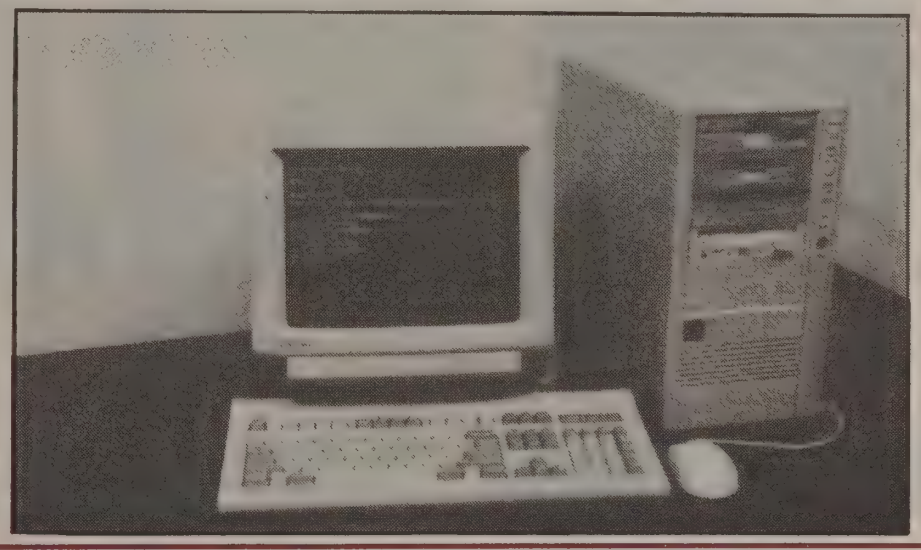

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INDUSTRY INSIGHT

BY PAUL HOFFMAN

BIG HARDWARE PRICE DROPS IN FEBRUARY

Many of the major PC manufacturers announced price reductions last month in a move to make their systems more affordable to recession-strapped businesses. Soon after they announced their reductions, smaller competitors also announced reductions to keep their price margins similar. The net result is that this is a great time for PC buyers.

The first round of reductions came from Dell, Digital Equipment Corporation (DEC), and Zenith. Dell, now one of the major retail leaders, cut prices up to 38%, particularly on its mid- and upper-range PCs. DEC and Zenith both cut prices on their high-end systems, those based on the 486 CPUs, as well as their faster 386-based systems. After the first round, IBM and Everex also announced decreases, mostly in the middle of their lines. Other manufacturers continued to cut the prices on the bottom end, mostly in 80386SX systems. The price of 80386SX-based portables has dropped particularly quickly with the rush of inexpensive clones.

Apple also dropped its prices across the board, particularly on the low end of the Macintosh line. In making the price cuts, Apple said that it was responding both to the PC market and to user demand for lower-cost systems. Now that Apple is meeting the demand for its new Quadra line, it has dropped the prices on less powerful systems in order to make the entire Macintosh line more attractive to PC users.

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on Internet (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

BANYAN ANNOUNCES SMALL GROUP PRICING

Following the lead of Novell and Artisoft (makers of LANtastic), Banyan announced reduced prices on its VINES network operating system for small LANs. Although it has not gone all the way to peer-to-peer networking, VINES is now available in low-cost packages for five, ten, and twenty users. The five-user package now costs $1300, or $260 per user. Although Banyan has always been more expensive than market giant Novell, VINES has almost always won contests for speed, ease of installation, and ease of maintenance over Novell.

Immediately after Banyan's announcement, Novell dropped the price of its five-user pack to $1100. Novell said that the price cut was unrelated to Banyan's announcement. Even with the $200 difference, it is likely that VINES resellers will still be able to make headway into Novell's near-monopoly on the low end. Banyan did not give much of a price break on its ten- and twenty-user licenses, pricing them at $2500 ($250/user) and $4000 ($200/user), respectively.

The networking market is continuing to expand rapidly both on the low and the high ends. As more small companies start to network their PCs, they have discovered that installing and maintaining a network is an incredible headache relative to using unnetworked PCs. Apple has an advantage over the PC world because Macintosh networks are easier to set up and maintain, but are usually significantly slower. Given VINES' easier installation and maintenance, it could take a larger share of the small network market away from Novell if it finds enough authorized dealers to present it as an option to buyers.

WPMA STANDS UP TO MICROSOFT, SUPPORTS WINDOWS AND OS/2

A few months ago, it looked like OS/2 v2 was destined to be a failure. Microsoft was lambasting it, corporate users were unsure how stable it would be, and it looked like Windows 3.1 would beat it to market. After the Windows and OS/2 Conference in San Jose in January, all that has changed. It now appears that OS/2 v2 will be released in March—very stable, and a solid corporate computing environment.

During the turmoil, a small but influential group, the WPMA (Windows and OS/2 Program Manager Association), was thrown into the conflict. WPMA is an association of corporate managers and developers. Instead of being a users group, it was meant to help in-house developers get a handle on the two major operating environments for the PC. When the WPMA was formed a few years ago, IBM and Microsoft still liked each other and were singing the praises of both operating systems. When OS/2 development became a political football, WPMA started to wonder about how important OS/2 would be in its members' corporations.

Just to add a touch of sleaze to the picture, Microsoft offered to give the group a significant financial incentive to drop OS/2 from its name. Late last year, Microsoft offered $150,000 if it dropped the "PM" from the name. Instead of letting the members decide the importance of each operating system, Microsoft wanted to bully its way into the group, which was hurting anyway.

After the good showing that OS/2 made at the show and the support it is continuing to receive from large corporations, the WPMA rejected Microsoft's offer. WPMA received $10,000 from IBM, Borland, and Novell, all of whom have a significant interest in seeing OS/2 thrive in the corporate environment. Microsoft also contributed $10,000, given the WPMA's continued support of Windows. Of course, Borland and Novell also want to see Windows thrive as well, and either way want to have a say in how corporations view the operating systems.

The WPMA will still continue to stress program development, both in-house for corporations and commercial development. It stresses sharing of information that would make development easier, such as product descriptions of development tools and tech-

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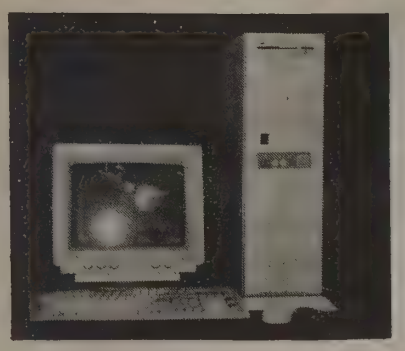
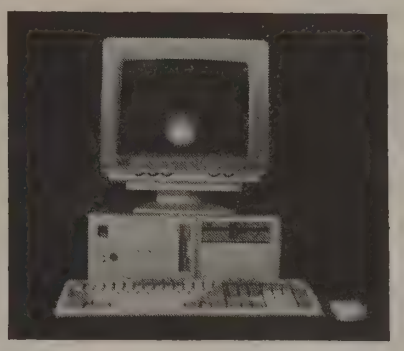


486/33 EISA $3,068
486/33 $2,288

- 8K + 256K Cache
- 4 Mb Ram
- 212 Mb IDE Hard Drive
- 1.2 Mb & 1.44 Mb Floppy Drives
- Super VGA Monitor 1024 x 768 (.28)
- SVGA 16 bit 1Mb Card
- 2 Serial, parallel, Game Ports
- 101 Enhance Keyboard
- Full Tower or Desktop Case
- $200 less For 486-25

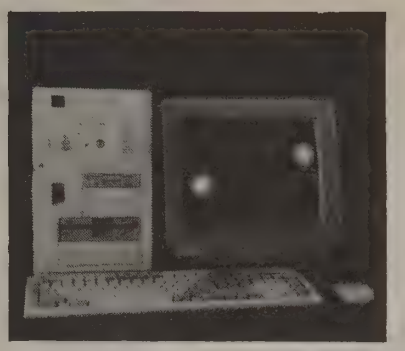
386/40 $1,643
386/33 $1,586

- 64K Cache
- 4 Mb Ram
- 130 Mb IDE Hard Drive
- 1.2 Mb Floppy Drive
- 1.44 Mb Floppy Drive
- Super VGA Monitor 1024 x 768 (.28)
- SVGA 16bit 1Mb Card
- 2 Serial, parallel, Game Ports
- 101 Enhance Keyboard
- Mid-Tower or Desktop Case



386/25 DX $1,206
386SX/25 $1,138

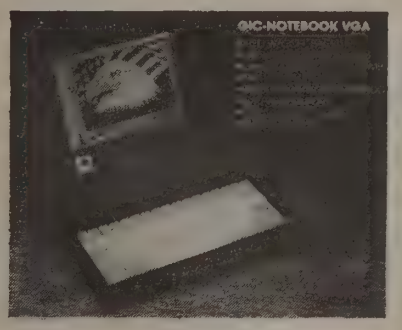
- 2Mb Ram
- 80 Mb IDE Hard Drive
- 1.2 Mb Floppy Drive
- 1.44 Mb Floppy Drive
- Super VGA 16 bit 256K
- VGA color Monitor 640 x 480 (.41)
- Add $ 110 For SVGA Color & 1 Mb
- 2 Serial, parallel, Game Ports
- 101 Enhance Keyboard
- Mid-Tower or Desktop Case



286/20 $738
286/12 $707

- 1 Mb Ram
- 40 Mb IDE Hard Drive
- 1.2 Mb Floppy Drive
- 1.44 Mb Floppy Drive
- 14" Mono. Monitor & MGP Card
- Add $ 150 For VGA Color & 256K
- Add $ 240 For Super VGA & 512K
- 2 Serial & Parallel & Game Ports.
- 101 Enhance Keyboard
- Mid-Tower or Desktop Case

* Novell Authorized Reseller		Software Package (Free Installed)		• 14" Non-Interlace 1024 x 768	$343	Colorado 120MB Tape Back-up	$244
• Novell 2.2 (5, 10, 50, 100 Users)	Call	• MS-DOS 3.3/4.01/5.0	$36/46/62	• 17" Non-Interlace 1024 x 768	$910	Colorodo 250MB Tape Back-up	$327
• Novell 3.11 (20, 100, 250 Users)	Call	• MS-WINDOWS 3.0 with Mouse	$62	• 20" Non-Interlace 1280 x 1024	$1341	Hewlett Packard IIP laser Printer	$863
• Ethernet 8-bit	$119	• Lotus 1-2-3 V. 3.1	$612	SONY CD-ROM (531D)	$405	Hewlett Packard IIIP Laser Printer	$1237
• Ethernet 16-bit	$140	• dBASE III + / IV	$712/816	Toshiba CD-ROM (XM3301B)	$613	Hewlett Packard DeskJet 500	$623
• Arcnet 8-bit	$60	• Auto CAD	Call	Memery SIMM/SIPP/DIP (70NS)	$52	Epson 7000 Laser Printer	$863
• Arcnet 16-bit	$119	• Word Perfect 5.1	$504	Inte'l Math Co-processor 287/387/487	Call	Panasonic 1180 9-Pin, Printer	$164
• Miscellaneous For Network	Call	• Games	From $10	Joystick (with String botton)	$28	Panasonic 1123 24-Pin, Printer	$234
• Server Installation	From $260	• Plus 2000 more types	Call	3-botton Serial Mouse	$15	Panassonic 1124i 24-pin, Printer	$296

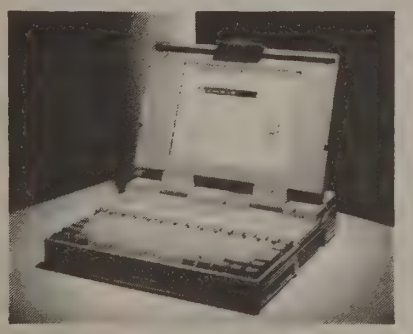


Notebook 386SX/20 $1,658

- LCD-VGA 640x480, 32 Gray Scales
- 60 Mb Hard Drive • 1.44 Floppy Drive
- 2Mb Ram • Ext. VGA / KB Adapter
- Serial/Parallel Ports • Mouse/Scanner Ports
- Battery (2.5 hours, Auto Recharge)
- Carry Bag
- 8.66"x11.41"x2.08" • Weight: 6.91 lbs.

Upgrade:

• Extra Battery	$67
• Battery Charger (Stand alone)	$99
• Mouse	$38
• Scanner	$156
• Upgrade hard Drive To 80 MB	$124
• Upgrade Memory To 4 Mb	$135



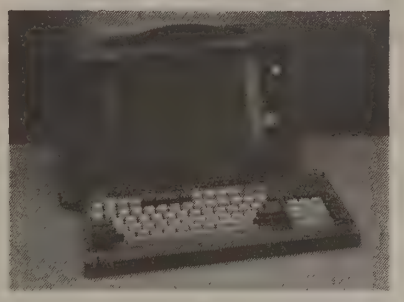
Notebook 386/33 DX $2765

- LCD-VGA 640x480, 32 Gray Scales
- 120 Mb Hard Drive
- 4 Mb Ram • 1.44 Mb Floppy Drive
- 2 Serial/1 Parallel Ports
- Battery (2.5 Hours, Auto Rechargeable)
- Mouse/Scanner Ports
- Carry Bag • External VGA/KB Adapter
- 11" x 8.6" x 2" • Weight: 9 Lbs.

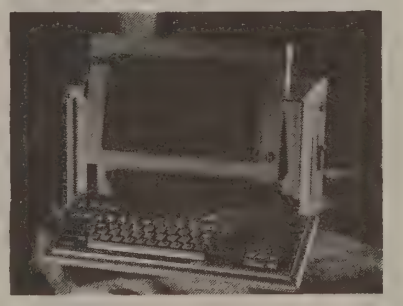
Upgrade

• Extra Battery	$114
• Battery Charger	$78
• Mouse	$39
• Scanner	$156
• Upgrade Memory to 8 Mb	$250
• Pocket fax 9600	$197
• Docking Station (1-8Bit, 1-16 Bit)	$270

LCD



GAS-PLASMA



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W/O	$ 1092	1123	1310	1372	1508	1565	1903
40 MB	$ 1227	1258	1445	1508	1643	1700	2038
80 MB	$ 1320	1352	1539	1601	1736	1794	2132
130 MB	$ 1424	1456	1643	1705	1840	1898	2236
200 MB	$ 1653	1684	1872	1934	2069	2126	2464
240 MB	$ 1695	1726	1913	1976	2111	2168	2506

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nical hints. Although some developers may only be interested in Windows for now, it is likely that those interested in supporting the corporate environment directly will eventually want to do so through native OS/2 development instead of relying on OS/2's Windows program box.

DEC ANNOUNCES NEW RISC CPUS

The long-rumored Alpha RISC processor from DEC is now less of a mystery. DEC has discussed details of the new CPU that will power its future lines of computers from workstations to mainframes. Instead of being just a new design for a RISC chip, the Alpha series also incorporates a great deal of new chip-making technology that allows DEC to make the chips run much faster than competing CPUs.

DEC has already promised that its main operating systems will run on the Alpha CPUs. Both VMS, Ultrix, and OSF/1 are being ported to the Alpha processor so that current DEC software suppliers can switch to the new CPU with a minimum of hassle. Although there is no firm commitment, Microsoft and DEC are also talking about porting the upcoming NT operating system to the Alpha chip. If that happens within the next two years, it could put a significant damper on the ACE consortium. Users should see DEC systems using the Alpha CPU at the end of this year or in early 1993.

DEC may also let other manufacturers sell computers based around Alpha. For example, DEC says that it's in negotiations with Cray Research; it's likely that other computer makers who have significant customer overlap with DEC may want to base new systems around Alpha as well.

APPLE MAY ASK FOR $4.4 BILLION IN MICROSOFT SUIT

In its never-ending quest to shock the computer community, Apple may ask for as much as $4.4 billion if it wins its copyright infringement suit against Microsoft and Hewlett-Packard. This was revealed last month after Microsoft successfully sought to reveal the amount that Apple suggested in a sealed document in the case. Although Apple is now publicly saying that the $4.4 billion figure is only "one estimate" of the damage done to it by Microsoft's use of its copyright, it will not state how much it intends to ask if it wins the now-famous case that will probably be tried in May or June of this year.

After Apple filed the papers, Microsoft apparently decided to make the amount public mainly to ridicule Apple for its greed and perverse accounting of damage. Apple responded that the number in the motion was only "the estimate of an expert witness," not what Apple was asking for. That expert witness was identified as Robert E. Hall from the conservative Hoover Institute at Stanford. Apple claims that it kept the document sealed because it contained proprietary information on Microsoft's and Hewlett-Packard's revenues, even though both companies are publicly traded and their revenues are well known. Apple also refused to step away from the $4.4 billion number, saying that it would choose a damage amount of its own later.

The damage claim to the court comes after many years of arguing in the case. Both sides now admit that there is no chance of settling the case before it goes to trial, and many people in each company admit that there have been almost no serious negotiations in quite some time. By making the figure public, Microsoft is seeking to show how out of touch Apple is with the reality of the market and to rekindle the public ire that Apple first drew when it announced the suit in 1988.

ELECTRONIC MAIL STANDARD EMERGES

Lotus, Apple, Borland, and Novell agreed to a common electronic mail standard that provides open access to each other's products and allows other companies to tie in as well. The VIM (Vendor Independent Messaging) standard allows interoperable mail applications that can easily send and receive mail between otherwise incompatible systems. VIM allows companies to support sending and receiving mail in non-mail applications like spreadsheets and word processors.

The VIM standard is in competition with Microsoft's MAPI, which is not yet finalized. Because of the ill will Microsoft has generated in the software industry, few companies trust Microsoft not to use MAPI to an unfair advantage, and thus wanted to adhere to a more open and fair standard like VIM. Apple is committed to including VIM in a future release of System 7, Lotus will include it in its cc:Mail package and Notes groupware, and Borland will make it available to developers who use Borland compilers. No one has committed to MAPI yet, although it is likely that some companies will support both standards. ■

Technology News From Japan

(Excerpted from the weekly news digest of Japan Marketing Group, 400 Groveland Ave., Suite 312, Minneapolis, MN 55403, 612/871-7889. JMG covers products and events in the Japanese computer industry.)

➤Matsushita Electric has announced its intention to team up with Sun Microsystems in the PC business. When Solaris 2.0 ships, Matsushita will implement it on the Panacom M Series PCs, thereby expanding its UNIX-based product line. The two firms have also set up twelve joint development projects, including a pocket-sized radio PC, a pen-input PC, a CD-ROM PC, and a notebook workstation, with the first product due as early as March 1992.

➤Starting in March, IBM Japan will market a Japanese version of the DOS/V operating system outside Japan. The operating system features the capability to print Kanji characters, enabling an English-language printer to print Japanese without using Kanji fonts. IBM subsidiaries worldwide will provide support.

➤NEC has agreed to license pen-based data entry technology from California-based Communication Intelligence (CIC), which also provides pen input technology to Apple and NCR. NEC already has pen-based technology for the US market, but considers CIC's more accurate for handling Kanji characters.

➤The Japan PC Software Research Laboratory predicts a 29% increase in PC software sales, to a level of 362 billion yen ($2.94 billion). 1991 sales were up 27% over the previous year, and the growth trend is expected to continue in 1993–1994.

➤In an aggressive campaign to increase its market share in Japan, Borland has announced its "Competitive Upgrade" promotion, offering its software at less than half price to users of competitors' software.

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- Dual Hard Floppy Ctrl
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- Vertical or Desktop
- 230 Watt Power Supply
- Super VGA Card w/1024K RAM
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386-40 SUPER VGA COLOR

- 64K Cache, US Made
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- Vertical or Desktop
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486-33 NON-INTERLACED COLOR

- 256K Cache, US Made
- 4 MB RAM, Exp to 32 MB
- Teac 1.2 High Floppy
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386DX-33 MHz $545.	386DX-40 MHz $565.
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•14" Mono w/MGP Card	$105.

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•14" VGA Color w/VGA Card	$ 245.
•14" SVGA Color w/ SVGA	$335.

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• 1 MB Ram	add $45
• 4 MB SIMM	$CALL
• 1.2 MB FDD	add $55
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Hard Disk Drives

• 85 MB (15ms, 32K Cache) $269.	$280	• 215 MB	CALL
• 105 MB (17ms, 64K Cache) $295.	$305	• 245 MB	CALL
• 120 MB (15ms, 256K Cache)	$355	• 615 MB	CALL

Modem & Parts

• 2400 Internal Modem	$39.
• 2400 Toshiba Laptop Modem	$105
• Mouse	$15.
• Mouse w/ Window	$65.

Printers

• Panasonic 1124i	$ 280.
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• Epson EPL 7000	$ 779.
• OKI Laser 400	$ 625.
• Daisy Wheel Cardco LQ/3	$ 69.
• HP LaserJet III	$ Call
• HP IIP Plus	$ Call

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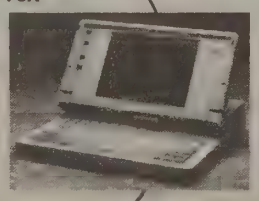
- 40 MB Fast Hard Drive
- 1.44 Floppy Drive
- Battery Backup
- Free Fastlynx w/ File Transfer Cable
- Free MS-DOS 5.0 w/ manual



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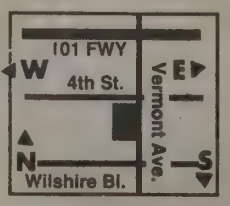

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MicroTimes Index Pauses After Record-Setting January

Computer stocks, as represented by the MicroTimes Stock Index, finished the month ended February 14 up slightly as these shares took a much-deserved rest from their recent record-setting pace. For the period, our index gained 0.57% to close matters at 3984.10.

Stocks nationally, as represented by the Dow Jones Industrial Average, finished the period down, losing 8.06 points before ending matters at 3245.97. Market insiders did not attribute the slight loss to any strong underlying trend. Quite the opposite, in fact, as investors attempted to make sense of a confusing milieu of economic signals during the week. Signals that included positive improvements in retail sales, unemployment and money supply, and a bond market which continued to plunge on fears of higher interest rates.

Lacking any broad trend to push them higher, the performance of the stocks in our index during the month was dependent on the news available concerning their prospects; as well as how investors interpreted that news.

One company for whom the news was good was Digital Equipment, whose shares gained 11.2%, or $6.00, before closing the period at $59.63. Investors bid up the company's shares in advance of Digital's planned unveiling of a more powerful computer chip which many analysts predicted would give the company a competitive advantage.

Microsoft, which finished the previous month as the largest dollar -gainer in our index, gave back some of its gains. The down-tick in the company's shares came after Microsoft valued Apple's claims in its ongoing lawsuit over Microsoft's Windows technology at $4.37 billion. For the month, Microsoft finished down $4.00 at $118.50 while Apple posted a slight $0.13 gain to end matters at $64.13.

Informix Corp. made good on analysts' predictions of a stellar fourth quarter, which had driven the company's shares higher during previous trading sessions. Informix, in fact, outdid even the most rosy of predictions by posting fourth-quarter net income of $0.55 per share, a net increase of $1.36 over the same time period a year ago. Investors wasted no time in responding to the news, as shares in the company were bid up 41.86%, or $9.00, to a closing price of $30.50.

Semiconductor concerns, or "Chip-stocks" as they are referred to on Wall Street, benefited from a stronger than expected improvement in the book-to-bill ratio, a measure of demand in the industry. Intel led the gainers resulting from the news as the company's shares climbed $5.63 during the month before coming to rest at $67.13.

EXCH	COMPANY		TICKER SYMBOL	CLOSING PRICE 01/20/92	CLOSING PRICE 02/14/92	NET CHANGE IN PERIOD	PERCENT CHANGE IN PERIOD	PRICE/ EARNINGS RATIO	ANNUAL DIVIDEND RATE	ANNUAL DIVIDEND YIELD	52 WEEK HIGH	52 WEEK LOW
	SOFTWARE											
OTC	Adobe		ADBE	62.50	58.00	-4.50	-7.20	26	0.32	0.55	68.50	41.25
OTC	Aldus		ALDC	35.75	32.75	-3.00	-8.39	21	0.00	0.00	59.88	28.75
OTC	Autodesk	(L)	ACAD	38.25	24.75	-13.50	-35.29	10	0.48	1.94	62.25	24.25
OTC	Borland		BORL	72.00	73.00	1.00	1.39		0.00	0.00	86.75	39.50
OTC	Informix	(H)	IFMX	21.50	30.50	9.00	41.86		0.00	0.00	30.50	4.38
OTC	Lotus		LOTS	31.00	32.50	1.50	4.84	33	0.00	0.00	40.75	18.00
OTC	Microsoft		MSFT	122.50	118.50	-4.00	-3.27	39	0.00	0.00	133.25	60.50
OTC	Novell		NOVL	57.50	59.88	2.38	4.13	54	0.00	0.00	65.00	22.50
OTC	Oracle	(H)	ORCL	18.63	20.25	1.63	8.72	81	0.00	0.00	20.75	7.00
OTC	Software Publishing		SPCO	21.38	22.88	1.50	7.02		0.00	0.00	35.25	12.50
OTC	Symantec		SYMC	45.25	44.25	-1.00	-2.21	60	0.00	0.00	51.00	19.50
	HARDWARE											
OTC	Apple		AAPL	64.00	64.13	0.13	0.20	24	0.48	0.75	73.25	40.25
OTC	AST Research		ASTA	22.00	20.50	-1.50	-6.82	9	0.00	0.00	32.75	14.50
NYS	Commodore		CBU	16.88	14.88	-2.00	-11.85	8	0.00	0.00	21.63	10.13
NYS	Compaq		CPQ	34.13	31.50	-2.63	-7.69	22	0.00	0.00	74.25	22.13
NYS	Digital Equipment		DEC	53.63	59.63	6.00	11.19		0.00	0.00	83.00	48.50
OTC	Dell		DELL	32.25	32.38	0.13	0.39	17	0.00	0.00	36.25	20.25
NYS	Hewlett-Packard	(H)	HWP	61.38	63.63	2.25	3.67	21	0.80	1.26	64.75	40.13
NYS	IBM		IBM	95.25	89.75	-5.50	-5.77		4.84	5.39	139.75	83.50
NYS	Silicon Graphics	(H)	SGI	52.75	55.50	2.75	5.21	43	0.00	0.00	55.50	26.50
OTC	Sun Microsystems		SUNW	33.13	32.38	-0.75	-2.26	17	0.00	0.00	38.63	20.75
NYS	Xerox	(H)	XRX	69.50	79.25	9.75	14.03	20	3.00	3.79	82.25	51.50
NYS	Tandy		TAN	27.13	30.00	2.88	10.60	14	0.60	2.00	36.50	23.38
	CPUs											
NYS	Advanced Micro Device	(H)	AMD	19.38	19.38	0.00	0.00	13	0.00	0.00	21.50	7.25
OTC	Intel	(H)	INTC	61.50	67.13	5.63	9.15	17	0.00	0.00	68.25	38.50
NYS	LSI Logic		LSI	9.75	9.25	-0.50	-5.13	49	0.00	0.00	12.50	6.50
OTC	MIPS		MIPS	12.00	11.13	-0.88	-7.29		0.00	0.00	20.88	7.88
NYS	Motorola	(H)	MOT	78.75	81.00	2.25	2.86	24	0.76	0.94	81.50	54.00
	COMMUNICATIONS											
NYS	AT&T		T	40.25	38.63	-1.63	-4.04	80	1.32	3.42	41.38	32.50
NYS	BellSouth Corp.		BLS	49.63	48.38	-1.25	-2.52	16	2.76	5.71	54.25	45.38
OTC	MCI		MCIC	32.38	33.63	1.25	3.86	17	0.10	0.30	35.00	24.63
NYS	Northern Telecom	(H)	NT	48.25	48.75	0.50	1.04	24	0.32	0.66	49.13	28.63
NYS	Pacific Telesis		PAC	41.63	41.00	-0.63	-1.50	16	2.12	5.17	45.00	38.50

NOTE: ASHTON-TATE WAS ACQUIRED BY BORLAND AND WAS REMOVED FROM OUR LIST. SYMANTEC COMPLETED A 2-FOR-1 STOCK SPLIT.
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N.Y.S.E. COMPOSITE	229.67	228.16	-1.51	-0.66
NASDAQ COMPOSITE	619.38	636.43	17.05	2.75

DATE	MICRO TIMES	DOW JONES
07/05/91	2850.09	2932.47
08/02/91	3132.83	3006.26
08/29/91	3265.70	3049.64
09/27/91	3216.77	3006.04
10/25/91	3223.68	3004.92
12/12/91	3254.85	2895.13
01/20/92	3961.41	3254.03
02/14/92	3984.10	3245.97

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Protecting The Electronic Citizen

Computer Democracy In An Election Year

BY JIM WARREN

Each month, this column concerns the future of computing—*our* future. In this election year, it's especially appropriate to address future techno-political interaction.

The first issue must be to assure that technology *enhances* our future and our freedoms, rather than degrading them. Fortunately, we can use our info-tools to, uh, "encourage" politicians to support that concept. At least we can in 1992. By 1996...

REALIZABLE FANTASIES

ELECTRONIC POLITICS: HOW TO DO IT

Although this focuses on protecting electronic democracy, it will work for any "just cause." These are nuts-and-bolts of *effective* grassroots political action:

1. Meet with candidates. Do this in their offices, preferably, as one of only two to four articulate, presentable spokespeople. Let one person do the talkin'—a nontrivial restraint in politics. It helps if you represent a formal group, but it is certainly not necessary. What sways candidates is whether they believe you can sway voters.

2. Indicate that you will report the results of the meeting to your community group, professional or trade organization, etc.—and especially to the online community, which you will need to describe. Most politicians simply don't realize the functionally free, mass-circulation, nearly immediate information-distribution capabilities of the nets. (If you don't either, please see the next two sections.)

3. When meeting a candidate, be *brief*, informed and informative. Plan a logical oral presentation of the issues. Support it with a two-to-eight-page summary of key points, positions and requests—and means for verifying your statements. Newspaper articles help—shows the press is interested.

4. Most important: Seek explicit commitments. *Every* successful politician has learned the art of *appearing* interested and supportive—*without* making commitments. Verbal assurances made in private are unreliable (to put it mildly). Specifically request specific action within a specific time frame. Request that the candidate issue a formal position statement "that you can publicize throughout your group."

Ask when you might expect a response from them.

Politely mention that you *will* also be reporting other candidates' responses, and that your group will undoubtedly view inaction or lack of clear public commitment—on the part of those other candidates—as disinterest, potentially even opposition, on these time-sensitive issues.

5. Don't expect somethin' for nothin'. Even if they equivocate, they are likely to ask for your support or even your formal endorsement. Answer: Your circulation of their position statement will draw the support and endorsement of a great many voters who are deeply concerned about eroding constitutional protections.

Note: I phrased this in the second person—"you" do it. But, just for the record—I'm personally pursuing this with various federal and state candidates in California. I walk it like I talk it.

TELL THE WORLD!

After your meeting(s), *report the results* as widely as possible—including non-response, which must be considered as negative. Use your local and global nets—perhaps the most powerful tools of modern democracy.

Use the internal net at your work or school. Can you broadcast personal notes on it, or just e-mail to dozens of individuals?

Ask your LAN managers, BBS sysops, or host administrators to post a logon notice—seen once by every user—identifying candidates who commit to electronic civil liberties, about which many sysops are *deeply* concerned. Seems like users might want to know who's willing to protect their/our online freedoms and privacy.

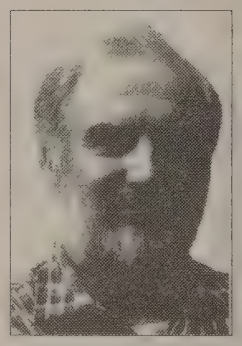
Then there's the rest of the online world: The WELL has about six thousand users (45% in the San Francisco Bay Area; 60% in California). BMUG has over ten thousand members. Fidonet, the largest of the BBS nets, has around two million users via tens of thousands of BBSes. The Usenet news-groups have about 1.9 million recipients on about forty thousand host computers. The Internet has about five thousand networks with around a million hosts, some with thousands of users. And I haven't even mentioned Compu$erve [*sic*], Plodigy [*sic, sic*], or the other high-priced spreads.

Finally: Please send names and e-addresses of interested sysops, and copies of formal statements issued by candidates to the address at the end of this column. I've just begun building a distribution list, but it already guarantees delivery to thousands of people. It should be reasonably easy to exceed the circulation of the largest metropolitan newspapers.

IF YA CAN'T MEET 'EM, AT LEAST WRITE 'EM

Sensitize candidates to these issues—and

Ask candidates to commit to the model statement, "Guaranteeing Constitutional Freedoms into the 21st Century." Or, write your own. After all, freedom and democracy have always been a do-it-yourself project.



Copyright © 1992 by Jim Warren, 345 Swett Rd., Woodside, CA 94062. All rights reserved. *Jim Warren founded* InfoWorld, *the DataCast proposal for paperless electronic newspapers, Wireless Digital, Initiative, Inc., and one of the nation's largest public microcomputer conventions. He was founding host of PBS's* Computer Chronicles, *founding editor of* Dr. Dobb's Journal, *and has chaired various computer trade and professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

He organized and chaired the 1991 First Conference on Computers, Freedom & Privacy, sponsored by a dozen nonprofit and industry organizations, and is a member of the board of directors of Autodesk, Inc.

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Guaranteeing Constitutional Freedoms Into The 21st Century

Harvard Constitutional scholar Laurence H. Tribe views technological threats to our constitutional freedoms as so serious that—for the first time in his career—he proposed a Constitutional Amendment:

"This Constitution's protections for the freedoms of speech, press, petition and assembly, and its protections against unreasonable searches and seizures and the deprivation of life, liberty or property without due process of law, should be construed as fully applicable without regard to the technological method or medium through which information content is generated, stored, altered, transmitted or controlled."

— opening session, First Conference on Computers, Freedom & Privacy, Mar. 27, 1991, Burlingame CA

In the absence of such an (unlikely) amendment, legislation and regulation are the only alternatives to assure that citizens are protected from technological threats against their constitutional rights.

POLITICAL CANDIDATE'S FORMAL COMMITMENT TO ACT: A MODEL STATEMENT

Preface: It has been over two centuries since our Constitution and Bill of Rights were adopted. The great technological change in the interim—especially in computing, telecommunications, and electronics—poses a clear and present danger to the rights guaranteed in those great documents. Therefore:

Commitment: In the first legislative session after I am [re]elected, I will author or coauthor legislation reflecting the following specifics, and I will support and testify in favor of any similar bills introduced by others. Further, I will actively seek to include in such legislation, explicit civil and/or criminal penalties against any employee or official of the government who violates these statutes. Finally, I will keep citizens who express interest in legislative progress on these matters fully and timely informed.

The protections guaranteed in the Constitution and its Amendments shall be fully applicable regardless of the current technology of the time. This particular includes, but is not limited to:

Speech: Freedom of speech shall be equally protected, whether by voice or written form, as in the 18th century, or by electronic transmission or computer communication, as in the late 20th century.

Press: Freedom of the press shall be equally protected, whether information is distributed by print, as in the 18th century, or by networked computers or electronic forms, as in the late 20th century .

Liability for content: Just as a printer is not liable for content of leaflets printed for a customer, so also shall the owner or operator of a computer or electronic or telecommunications facility be held harmless for the content of information distributed by users of that facility, except as the owner or operator may, by contract, control information content. Those who have contractual responsibility for controlling content shall be the parties singularly responsible for such content. Sans such contract, the author is responsible.

Assembly: Freedom of assembly shall be equally protected, whether by face-to-face meeting, as in the 18th century, or by computer-assisted electronic conference, as in the 20th century and thereafter. The right to hold confidential meetings shall be equally protected, whether they be by personal meetings in private chambers, or by computer-based private electronic conferences.

Self-defense: The right of the people to keep and use computers and communications connections shall not be abridged by the government.

Search & seizure: The right of the people to be secure in their papers and effects, against unreasonable searches and seizures, shall fully apply to their electronic mail and their computerized information, and shall also apply to their personal computer equipment.

Warrants: No warrants for search or seizure shall issue for computerized information, but upon probable cause, supported by oath or affirmation, and particularly describing the computer system to be searched and the specific information to be seized, and also the specific computer equipment to be seized.

Secure information vaults: Just as search and seizure of letters in a post office and papers in a bank-vault lock-box, and surveillance of conversations on a telephone line by wire-tap, each requires a separate warrant for each postal address, lock-box, and telephone line, so also shall a separate warrant be required for each electronic-mail address or other computer files of each suspect, when stored in a computer facility shared by others. And further, such files stored in a shared facility by or for a citizen who is neither named in a warrant nor associated with a suspect so-named, shall not be used against that unnamed citizen, if seized or discovered during legal search of or for files of a suspect.

Self-incrimination: No person shall be compelled in any civil or criminal case to be a witness against himself or herself, nor be compelled to translate or decode computerized information that he or she believes may be self-incriminating.

Property: Private property shall not be taken for public use without just compensation, nor shall it be used nor sold by the government for less than fair market value, in which case all such proceeds shall promptly derive singularly to its owner prior to government seizure.

Speedy release: Anyone not accused of a crime shall enjoy the right to a speedy release and return of all of their property as may be seized, particularly including their computerized information. The government shall be fully liable for any damage befalling property, including information that they seize.

[For extra copies: Jim Warren, 1992 Electronic Civil Liberties Initiative (ECLI), 345 Swett Rd., Woodside, CA 94062; voice/(415)851-7075, fax/(415)851-2814, email/jwarren@autodesk.com -or- jwarren@well.sf.ca.us]

our capabilities. Letters and notes—even a few of them—can do wonders. E.g., online complaints by only a dozen WELL-dwellers, about parts of a just-introduced data-privacy/computer-crime bill, have already prompted legislative proposals for modification. Tell candidates that:

In 1990, Lotus planned a product that would offer computerized personal data on twenty million upscale consumers. A single message about it began circulating on the nets, and it prompted thirty thousand complaints to Lotus. They canceled the product.

In Spring, 1991, one message about US Senate Bill 266 circulated on the nets. It detailed how one sentence buried in the bill—reportedly requested by the FBI via Senator Strom Thurmond—would cripple secure electronic communications for US citizens and businesses. That one message caused a flood of phone calls, faxes, and mail. Result: The language was quickly withdrawn.

People are getting online at a rate far greater than the explosive growth of personal computing since its inception in the mid-'70s. Millions are communicating in milliseconds, essentially without cost. It is trivial to broadcast personal comments or information to dozens of people—or thousands.

In the last two or three years, a growing percentage of the fifteen to twenty million people who are online have expressed increasing concern about protecting their traditional civil liberties and personal privacy in the Information Age. As they become familiar with the networked computers they use for personal and business electronic mail, private and public teleconferencing, and for general information exchange, they are seeing increased threats against electronic "speech," "press," and "assembly."

TAKE ME TO YOUR LEADER

In face-to-face meetings, and in letters, ask candidates to commit to the model statement, "Guaranteeing Constitutional Freedoms into the 21st Century."

Or write your own. After all, freedom and democracy have always been a do-it-yourself project.

FOMENT FOND FANTASIES, HERE!

Send your fantasies for realization to Realizable Fantasies, 345 Swett Rd., Woodside, CA 94062 or by e-mail to jwarren@autodesk.com. (Pacifica's Dave Yuhas' noted that I've not been listing my e-address...) Published proposals will be attributed to their authors, unless anonymity is requested. ■

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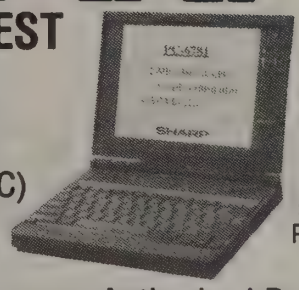

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Looking Inside DOS To Help With Your Work

BY ED KAHN

DOS Is Still The Best Choice For Portables, And Reading Inside DOS *Each Month Will Increase Your Knowledge And Understanding Of This Operating System*

LAPTOPS

There are many users who still prefer to work from the familiar C> prompt, in spite of the current move toward Windows. Each successive release of MS-DOS has both added new features and capabilities as well as increasing the skill level required to get the most out of this operating system. DOS-based software can be especially rewarding for portable computer users. Despite the advances made in the quality of displays for portable computers, I still find using Windows on a monochrome screen less than optimum.

If you decide to stay working with DOS, it is truly a worthwhile investment of your time to learn about the power of DOS and to become familiar with the capabilities of the programs included with the operating system. Visit any bookstore with computer literature and you will find a variety of books that will attempt to teach you more than you would even want to know about DOS 5.0. My general advice to beginners is to have a specific question in mind when they visit a bookstore and examine several of the available books. Buy the volume that seems the most clear and straightforward. I also suggest buying one of the simpler books rather than a thousand-page tome.

However you gain your introduction to DOS—and it's even possible to learn about it from the documentation that comes with MS-DOS 5.0—you will find that learning more will increase your effectiveness. Most of the questions friends ask me about computers concern using the operating system. It's clear that even learning a half dozen commands will make life a lot easier for most computer users.

But what about the user who has mastered the basics and wants to explore the system in more depth? As I have mentioned, there are many books. But recently I ran into a publication that, while more expensive than most books, offers a continuing treasure of tricks and basic information, all presented in a simple and straightforward style. *Inside DOS*, published by The Cobb Group of Louisville, Kentucky, is a monthly newsletter that features different aspects of DOS each month.

Each issue of *Inside DOS* focuses on a command; discussing it in some detail, presenting examples that are fully explained and illustrated. Anyone familiar with the basics of DOS will be able to follow the discussions. As you read the 12-page newsletter each month, your knowledge of the operating system will increase, saving you time in all of your computing.

Now in its third year, the depth and scope of the discussions presented remain impressive. The articles are long enough to take you into the power of the commands, but not so long that you will be left in the dust if you are not a sophisticated computer user. I like to browse through the newsletter rather than read it from cover to cover. In each issue there will be at least one article that I want to read in full. Also, back issues remain just as relevant as the newer ones. If is often interesting and helpful to review the table of contents of past issues as your knowledge of DOS grows.

While most articles focus on DOS commands, there are also discussions of broader interest. For instance, a recent issue contained an article on using the autoexec.bat file to customize your system. Another issue discussed, in two pages, whether you need a mouse, the trade-offs between serial and bus models, and the history of the device. Another issue presented a detailed discussion of the DIR command. You may be amazed to discover the power of this command and to learn the kinds of information that you can find using its sophisticated capabilities. A final article that recently caught my attention was a discussion of how DOS 5.0 undeletes files. This is a new feature with the latest version of DOS and is extremely useful when you find you have mistakenly erased a file.

I first learned of this valuable publication through a card that came with my DOS 5.0 upgrade. Since then, I have discovered that The

Continued on page 104

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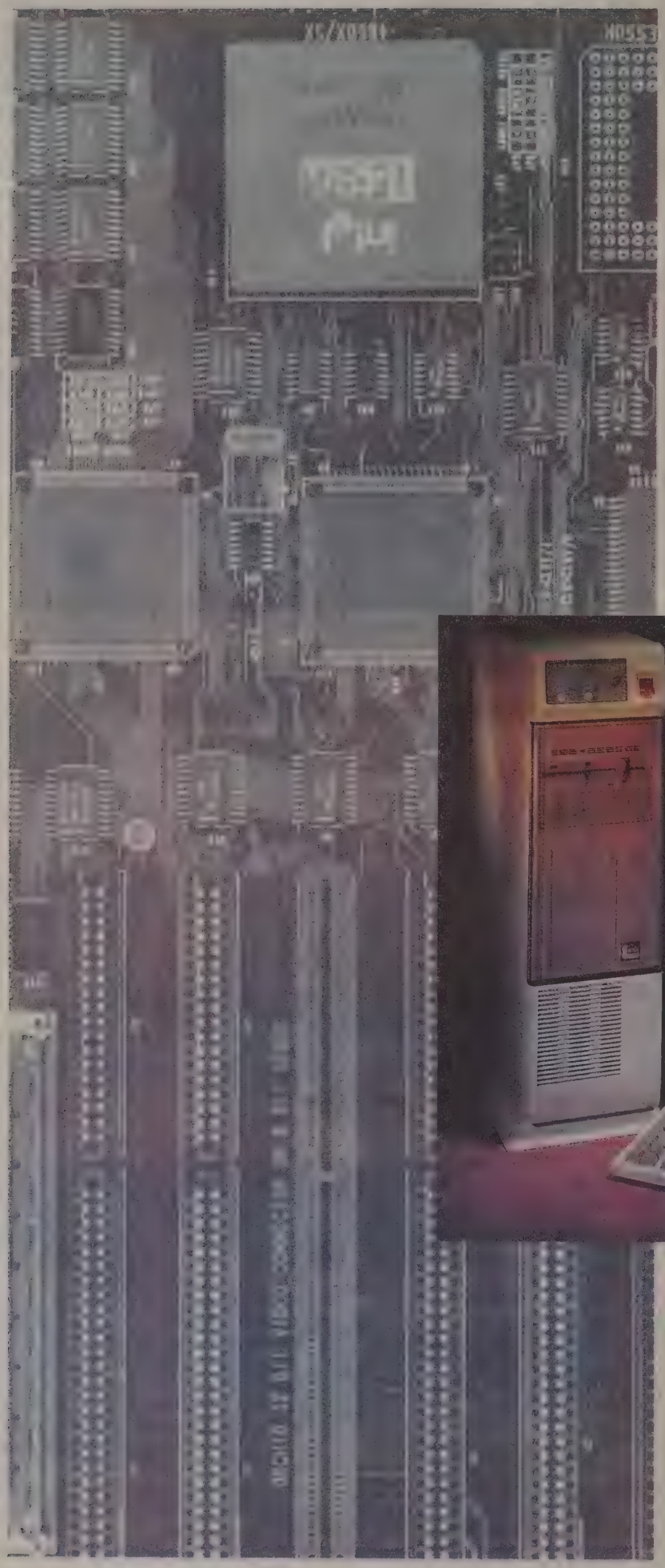

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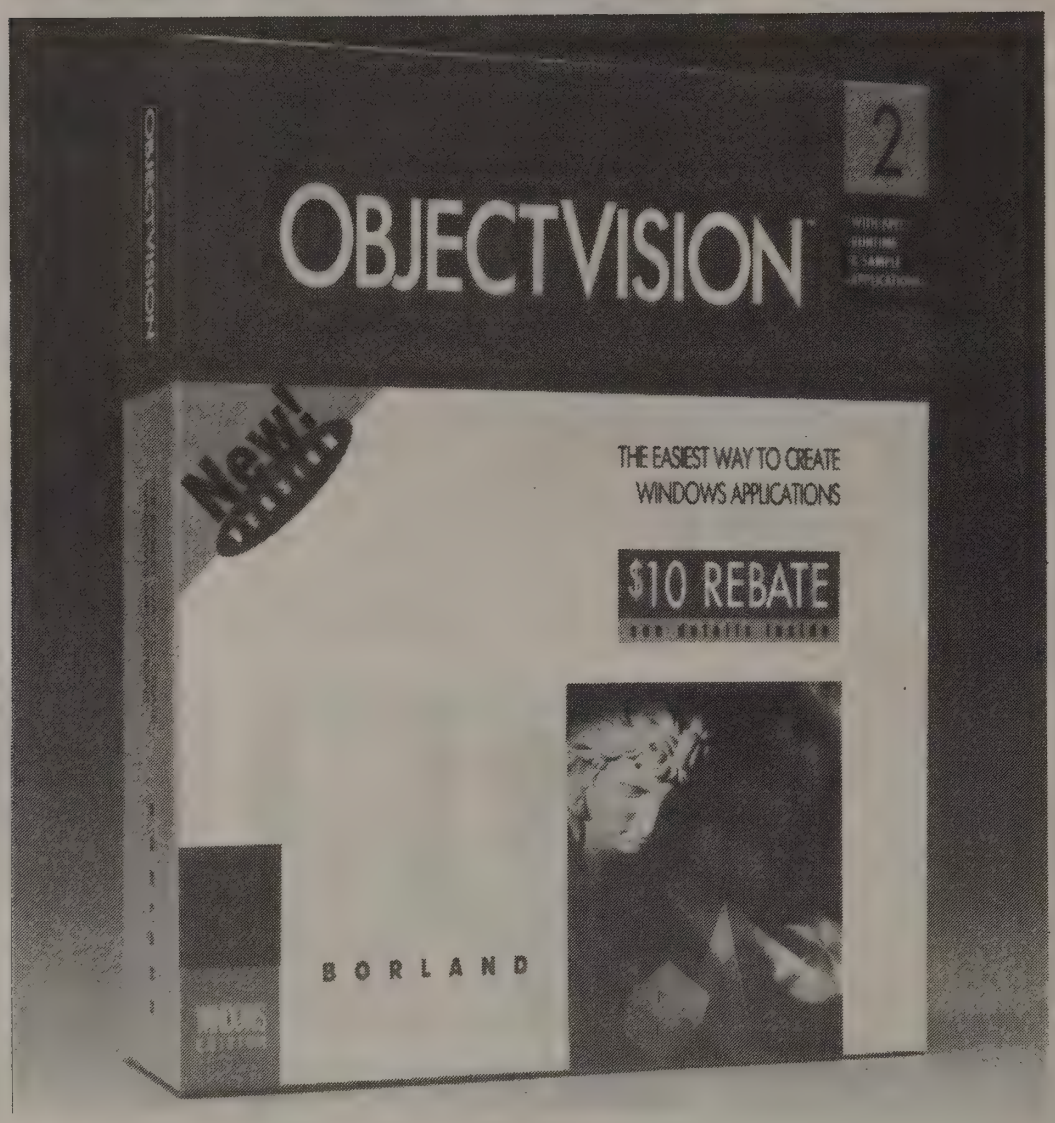
ObjectVision Helps Promote Quality Service

BY DAVID PLOTKIN



The Staff At Nances, A Calistoga Motel/Spa, Uses ObjectVision To Computerize The Record Keeping For This Thriving Business

The town of Calistoga, just to the north of Napa Valley wine country, was founded in the mid-1800s when silver was discovered in the surrounding hills. It also had the good fortune to be located on top of a massive set of geothermal hot springs. As a result, the town is a haven to visitors from all over the world who come to enjoy the mineral waters, mud baths, steam, blanket wraps, and massage.

Calistoga customers enjoy the high priority everyone in this town places on service. Spas and resorts line the main street, Lincoln Ave., and Nances, built in the early 1940s, is one of the most respected of the motel/spas in the town, resting at the east end of the avenue. Although there are more modern spas in Calistoga, Nances' rooms and bathhouse appointments are booked solid throughout the year.

Nances' manager, Sarah Wright, believes in the "personal touch"—of knowing her customers, their likes and dislikes, their room preferences, their favorite masseur/masseuse, etc. Every year she sends them a Christmas card, which is also good for a discount in the upcoming year. There is a problem with all this, however. It is very difficult and time consuming to keep track of the more than thirty-five hundred different sets of customers—and sending out that many hand-addressed Christmas cards is a massive job that must begin in October!

DEFINING THE TYPE OF SOLUTION

Computers appear to offer a valuable solution for Sarah to help track and manage this information. But in Calistoga, a town where many of the buildings predate the invention of the automobile and telephone, townspeople have been slow to use computers. After suggesting that a computer and the appropriate software could solve her problem, Sarah and I met to clarify our understanding of what problem we were trying to solve, the constraints, and what offered the best solution.

It quickly became clear to Sarah that Nances needed a computerized database just to maintain customer information. Because of the legal requirement to maintain customer's records for seven years, the paper files already filled several large rooms and continue to grow. The database had to fulfill several other functions:

•It must be flexible to be customized for tracking nonstandard information.

•The database must be capable of generating selected mailing la-

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David Plotkin is a Data Analyst for Chevron Corp., Human Resources.

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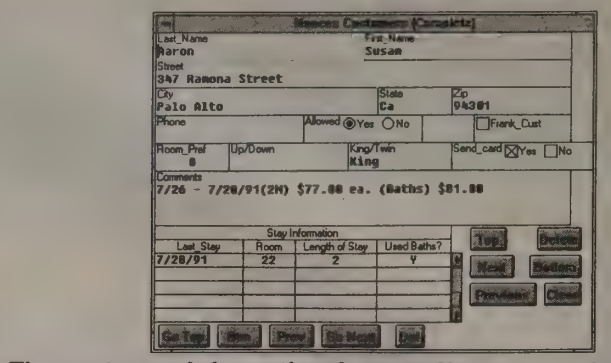
bels for Christmas cards and other special purposes.

•And finally, the software must be easy to learn and use. (I live over an hour from Calistoga and couldn't be running to Calistoga every time they couldn't figure something out.)

Another important consideration in this process was that the whole setup—hardware and software—must be affordable. Since this was their first experience with computers, understandably Nances didn't want to spend too much money before seeing any results. This meant that not only did we not want to purchase a lot of high-end hardware, but the software programming effort could not consume a lot of time either. Again, the entire system needed to be easy to configure, program, and maintain.



The customer information form at Nances can include text, buttons, and checked boxes linked to other forms and multiple databases

SELECTING THE SOLUTION

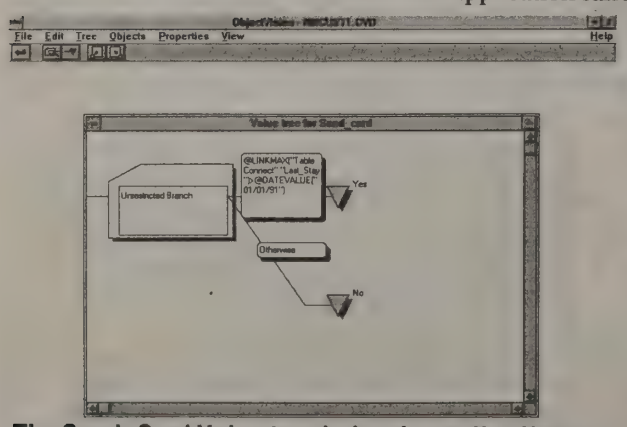
With this definition of what Sarah needed, we chose a 386SX system running Windows 3.0. Although not a real speed demon, it has adequate performance for a very reasonable cost. With a staff that had never used a computer before, it was imperative that they not be faced with the vagaries of DOS. Windows 3.0 and software that runs in Windows are much easier to teach to a novice than plain DOS. (In case you are wondering, I didn't choose the Mac because of the higher initial cost of the hardware and the fact that I haven't done much development for that platform.)

The big decision in this venture was which software to use. Many of the requirements could be met by dBASE III+ or IV, but neither is easy to learn, and programming a menu-driven application is a lengthy process. I first looked at Toolbook 1.5 and actually programmed the prototype in this very capable program. However, there are several drawbacks that made Toolbook applications unsuitable for this project. The most important limitation was performance—with thirty-five hundred records, it could take Toolbook ten minutes to retrieve a desired record. Further, Toolbook stores both the data and the application in a single file; this means that Nances could not use the database anytime it was being upgraded.

After looking at the available Windows applications, I finally settled on Borland's ObjectVision 2.0. This program, while not fulfilling every requirement, easily works with other programs to fill in the missing pieces. ObjectVision 2.0 is essentially a Windows-based front-end for Paradox, Btrieve, ASCII, or dBASE files. (I converted the data in the Toolbook prototype to dBASE format using the Exchange tool included with Toolbook.) ObjectVision works much like Toolbook or Visual Basic, but is optimized to work as a database and includes many specialized functions toward that end.

BUILDING AN OBJECTVISION APPLICATION

To build an ObjectVision application, you use the Form tool to design the interface. An application can include any number of forms, each in its own window. The Form tool works through point-and-click: to create a field on a form click on the field icon on the tool bar and you will be prompted for the necessary information (such as the field name). To add this new field you simply click on the form where it should appear. The Form tool bar includes lines, graphics, button, and text objects. Color, size, font, and other properties are also modifiable to make the form look just the way you want.



The Send_Card Value tree helps the staff at Nances quickly decide which customers they should send holiday or other special cards

One of the advantages ObjectVision has over other dBASE front-ends is the ability to link to multiple relational databases and to set up one-to-many relationships. This is done with the Table object. At Nances, there is a need to record information about each visit (date, room number used, etc.) as well as keeping that person's main data (address, phone number, etc.). The main customer information is recorded in one database (indexed by name), while the information for particular visits is recorded in another (related) database, also indexed by name. The repeating information shows up on the customer's form automatically and can be edited directly.

Once you have developed the forms, you use what Borland calls a tree to specify how they will behave. There are two types of trees: Value and Event. A full range of functions can be built into either type of tree to create a program that will be executed each time a tree is called by the program. The choice of functions are presented in the dialog box you use to build a tree.

Value trees allow you to specify the value in one field through looking at the value in another field or the result of a calculated function. At Nances, Christmas cards are sent only to people who have stayed during that year. Thus, the field Send_Card is set to Yes if the last Last_Stay date is later than 01/01/91, otherwise it is set to No. The possible values on the main form for Send_Card are Yes or No. These possibilities are set automatically by the branches of the Value tree. If we were to modify the Value tree to add a branch, this third alternative would show up automatically as an extra check box on the main form.

The other type of tree—an Event tree—is essentially a subroutine that is executed when something else occurs. This is most commonly used to have a set of functions performed when you click a button. Another example is when you unselect a field, a value check takes place and warns if the value you have entered is out of a defined range. Unfortunately, you must program these value checks yourself, ObjectVision doesn't support validation range checks on fields.

Event trees make it possible for Nances to customize its database. We designed an Event tree to open the application with a specific set of drop-down menus. These menu items work as filters to retrieve a selected set of records. If, for instance, you set the filter for the customers of Frank Hughes, the head masseur, when you select one of these menu items, it is sent to the application as an event, and the event tree is programmed to bring up those records.

You can easily be fooled by ObjectVision's use of trees into thinking that you have built a program without actually programming. In fact, Borland advertises just that. So while you are not writing code in the traditional sense, building Value and Event trees is using objects to program the application to achieve a desired result. The conclusion for any branch of the tree can be a whole series of function calls—thus creating a program, also known as programming, by anybody's definition.

Attaching the form you have designed to the underlying database is the final step in building an ObjectVision application. This is done

Continued on page 138

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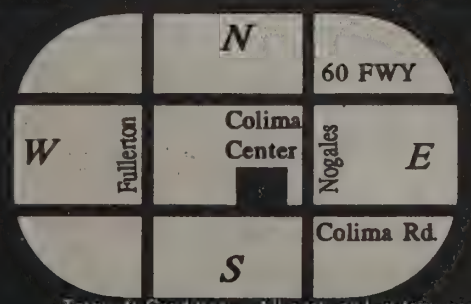

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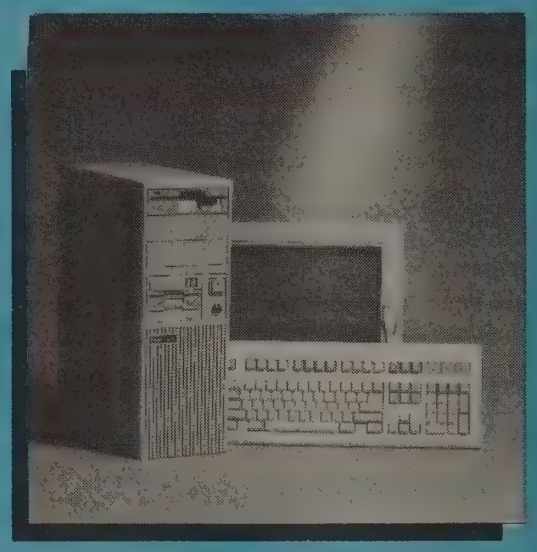
*Optional VGA Monitor & 1.44 MB Floppy Pictured



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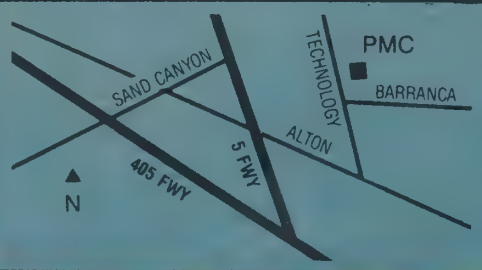

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Small-Footprint LANs With Laptops

Plus: Mac Troubleshooting Resources

BY WAYNE A. YACCO

LOCAL AREA NETWORKS

I just read the results of WordPerfect's $25,000 contest, the object of which was to guess the number of copies of WordPerfect for Windows that would ship within the first thirty days. Guesses ranged as high as 910,620,044; WordPerfect actually shipped over 369,000 copies. But oddly enough, according to WordPerfect, the lowest entry was zero. I wonder if anyone noticed a small, nearly middle-aged guy dressed like a college student putting that entry in the box. Come on, Bill, you knew zero was wishful thinking.

On the other hand, if you're looking for tiny workstation technology, the Carry I miniature PC is not wishful thinking. Although it takes up very little desktop real estate, and moves easily between offices, the Carry I has the features of a real workstation. It's a 386SX computer with a slot; 2 or 4 megs of RAM; a 40, 80, or 120MB IDE hard drive; a 1.44MB floppy; two serial ports; one parallel port; and on-board super VGA (with its own 512KB of dual-ported video RAM). The latest version of DR DOS 6.0—with which it comes bundled—can effectively double its hard-disk storage using compression.

The 5lb. Carry I has a little of everything: a little monitor, a little laptop-style keyboard, and a little system box. Flytech calls it a "book-sized" computer. Everything but the monitor fits into a soft carrying case that's included. And with its vertical stand, the Carry I truly does have a very nearly zero footprint. You can put a lot of them into very little space. Or put them into any space with more of everything else. For more demanding applications, Flytech plans to ship an i486-based version in Feburary. The $2000 unit will be extremely expandable: up to 32MB of RAM and a removeable 2.5" hard disk (40MB to 120MB per module).

The Japanese use laptops on the desktop to maximize scarce space, and with a parallel-port LAN adapter from Xircom, IQ Technologies, and others, laptops could serve as workstations too. The big drawback is a lack of color, which can only be had by adding about a ton of money to a portable's 8- or 10lb. weight.

Admittedly, the Carry I's 10" color monitor is far less portable than a laptop display—even though it's shipped in a box with a handle. It is small enough to be moved easily, however. And as small and light as it is, it has a top resolution of 1024x768 (interlaced) and a very fine .26 dot pitch. That's light years beyond any laptop display, including active-matrix color models.

Incidentally, I mentioned the space-saving nature of the Carry I keyboard a while back, but didn't know if they were sold separately. They are. It's an 81-key miniature keyboard with full-size key caps and standard spacing.

Copyright © 1992 by Wayne A. Yacco. All rights reserved. *An editor, writer, and consultant specializing in microcomputers and their business applications, Wayne Yacco writes articles, columns, and reviews for many trade and business publications. He can be reached at Box 269, Burbank, CA 91503.*

MORE ON SYSTEM 7

One company with a couple of great new Mac products at MacWorld was Goldstein & Blair. They're expanding *The Macintosh Bible* into a whole line of books. *The Macintosh Bible Guide to System 7* has several sections that are applicable to LAN installation and use. *The Dead Mac Scrolls* (or, *The Macintosh Bible Guide to Saving a Fortune on Mac Repairs)* is one that absolutely every Mac LAN manager will want to have handy, and every Mac user will want as a resource. It's a reference, not a how-to book, but it includes hundreds of repairs, from simple to solder. Some, anyone can do. The rest, anyone can learn to do with a little help. (Author Larry Pina suggests some of his other books that do lead you through the basics.) If you have some experience, and a few tools, you'll be able to do all of it.

Of course, the biggest savings are gained by board-level repairs. It's hard not to come out ahead when you replace a 50-cent resistor instead of a $500 logic board. This book is full of such tips, and each describes not only appropriate symptoms, but a cross reference to other possible causes.

Then again, the wrong soldering iron can cook a board beyond repair. Beginners need either guidance or a bucket of guts to work at this level.

Even if you only want to do simple repairs like replacing the fuser-roller-cleaner felt in your LaserWriter, this book has a big advantage. It consolidates all the maintenance tips for printers, drives, monitors, and systems into one handy volume. Easy access to everything in one place makes information much easier to use. It only lacks one thing, really—an on-line version.

Furthermore, the most fearful neophytes—or harried, nontechnical

The Japanese use laptops on the desktop to maximize scarce space, and with a parallel-port LAN adapter, laptops could serve as work-stations too.

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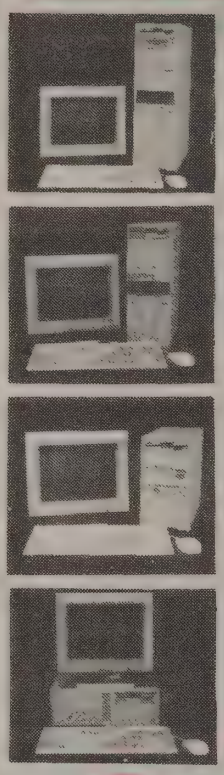

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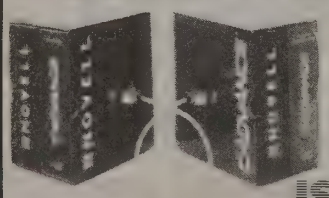

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The biggest savings are gained by board-level repairs. It's hard not to come out ahead when you replace a 50-cent resistor instead of a $500 logic board. The Dead Mac Scrolls is full of such tips, and each describes not only appropriate symptoms, but a cross reference to other possible causes.

network managers—can use *The Dead Mac Scrolls* every time they send a piece of equipment out for repair. Just as for car or appliance repairs, knowledge of the problem can help you avoid a technician who wants to replace a subsystem when all that's required is an adjustment or part. And when something isn't right after a repair, you'll know how likely it is that a faulty or incomplete repair is the cause.

It should be a bylaw of every user's group to have at least one copy of this book for reference. If you don't have access to one of your own, find a friend who has one. Better yet: Get a copy, and attract more friends. ■

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Santa Clara, CA 95054
(408)727-7373

The Macintosh Bible Guide to System 7, $12
The Dead Mac Scrolls, $32
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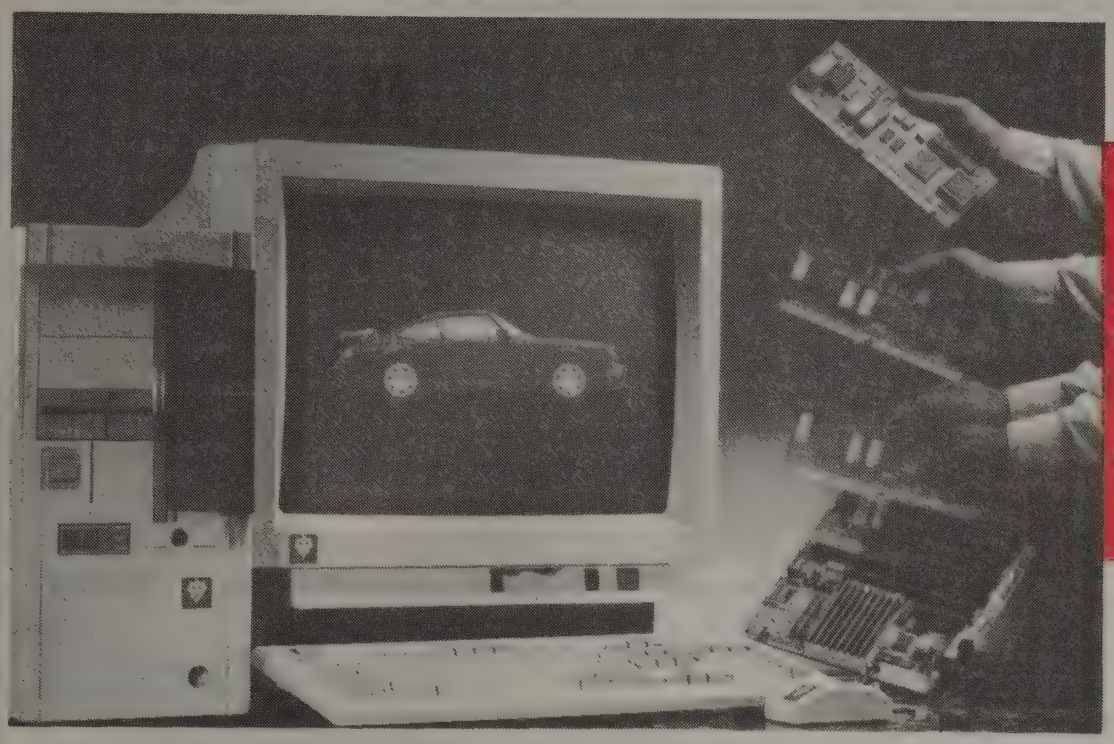

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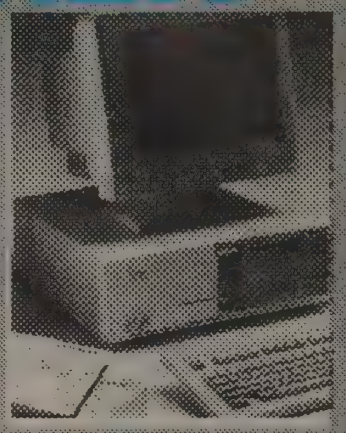

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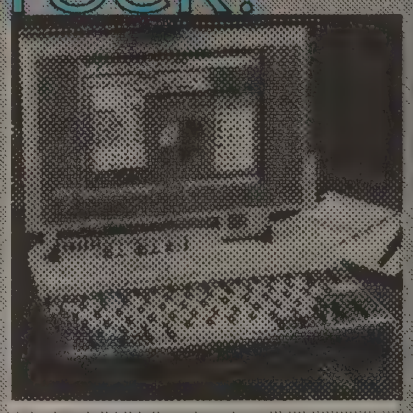

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Integrated Software: Trap Or Bargain?

By Mike Markowitz

Integrated applications are the Swiss Army knives of software. They offer a versatile set of standard tools in one compact and relatively inexpensive package.

AppleWorks (v3.0, $169 retail, published by Claris), for the Apple II series, was one of the first successful programs of this kind—it included a word processor, spreadsheet, and database sharing a common user interface. You could even exchange data among the three modules, copying numbers out of a spreadsheet to paste into a word processor document, for example.

MICROSOFT WORKS

Microsoft Works for MS-DOS (v2.0, $149 retail) offers a similar degree of functionality for PC users. Basically a text-based program, it uses a mouse very effectively. With total worldwide sales of over 2.5 million copies, Works is a real success story, although power users, reviewers, and corporate types may sneer at its limited range of features.

Microsoft Works for Macintosh (v2.0, $295 retail) adds a telecommunication program and some simple drawing tools to the basic word processor-spreadsheet-database formula. The program has a usable Mail Merge feature, and provides excellent support for printing mailing labels. Although data import/export options are severely limited, there is a very good "Works-Works Transporter:" an Apple File Exchange translator that can convert AppleWorks files to the corresponding MS Works formats .

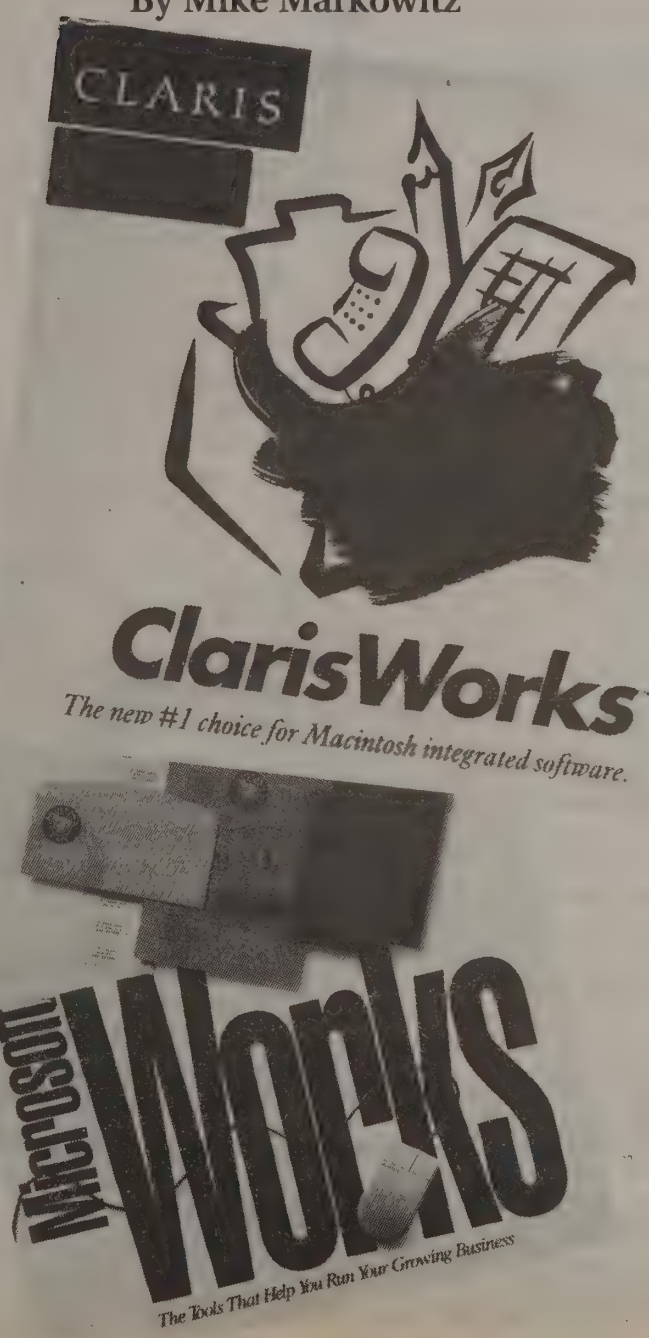
Microsoft Works for the Mac has some features that are less than perfect for beginning users. The program makes extensive use of "hierarchical menus" (you have to pull down, then pull out—an exercise in advanced mouse control). The drawing function is limited to a few basic tools and eight colors, and operates as an "overlay" on top of your text or data.

The application itself takes up only 590K on disk. Dictionaries and Help add another 460K, and Works demands only 768K of RAM for itself. Microsoft prices the Macintosh version of Works very aggressively—a typical mail order price is $165, with college student prices as low as $82. Some resellers even bundle the program with new low-cost Macs.

Microsoft has done a good job getting out "maintenance releases" of Works that will run on new Mac systems, but the program is long overdue for a major upgrade that will add System 7 functionality.

Microsoft Works for Windows is a completely new (released September 16, 1991) and very ambitious package designed to run under Microsoft Windows 3.0. Versions in French, German, French Canadian, Italian, Dutch, Finnish, Norwegian, Swedish, Danish, Hungarian, and Czech have been announced.

The word processor includes a 120,000-word spell check dictionary and 190,000-word Thesaurus. It can import or export documents using the file formats of Microsoft Word and WordPerfect. The spreadsheet is similar to Excel, with a highly functional Toolbar and the wonderful Autosum feature. The database can handle up to thirty-two thousand records. The inte-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Integrated software is a good option for those repelled by the high cost of full-featured software, overloaded with esoteric features most users will never touch.

grated drawing program is a vast improvement over the feeble draw overlay function found in Works for the Mac.

One of the best features of the program is a colorful interactive tutorial, which starts from the very basics, and guides you step-by-step through real tasks using the actual program. The comprehensive online Help system lives up to the very high standard set by Windows 3.0 itself. All these features demand a lot of disk storage—with everything installed, the program occupies 2.7MB on disk.

Works for Windows has a list price of $199, but the upgrade for users of the DOS version is $79, and a $99 academic edition will be offered to schools and colleges.

Works for Windows was designed to integrate smoothly with two other low-cost Windows 3.0 programs aimed at the home/small-business user: Microsoft Publisher and Microsoft Money.

GREAT WORKS

Symantec's Great Works ($299 list) includes eight modules: word processor, database, spreadsheet, charting, painting, drawing, outlining, and telecommunication. The package includes an extensive collection of file translators.

The word processor provides spell checking, multiple columns, and mail merge. The idea of separate paint and draw modules is odd, considering that programs like SuperPaint (Aldus) and Canvas (Deneba) can provide paint and draw tools in the same window. The communications module is a no-frills terminal program with no scripting feature.

CLARIS WORKS

The success of the "low-cost" Macintosh models (LC, IIsi, and Classic) expanded the market for low-cost Mac software. The release of the new Mac PowerBooks emphasizes the need for compact applications that deliver a lot of functionality without requiring vast amounts of memory and storage. **Claris Works** (v1.0, $299 retail) is well designed and positioned to meet these needs.

Claris Works integrates different functions using a unique "frame-based" design. When you open a new document you have the choice of word processor, spreadsheet, database, graphics, or communications, but within most document types you can open up "frames" of another type. For example you can open a spreadsheet frame within a word processor document by simply clicking on the cell cursor tool and dragging out a rectangle (filled with rows and columns) anywhere on the page. You can do very effective page layout by opening a graphics document and then linking a series of text frames.

The program itself, written by Robert Hearn and Scott Holdaway, takes up less than 600K on disk and will run comfortably in only 900K of RAM. It can share dictionaries, translators, and other resources with other Claris applications, which also helps to conserve disk space.

The word processor resembles MacWrite II. To get a word count, you have to do a spell check, and the program cannot count lines, paragraphs, etc.

The drawing module resembles MacDraw Pro. The number of colors

Continued on page 140

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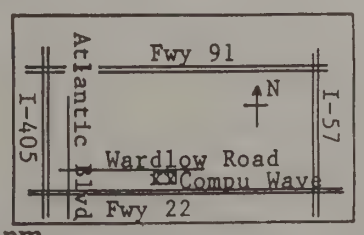

(Front to back) Allen Yu, Peter Lai, and Joseph Bentzel are among the organizers of CompuExpo, which they're billing as the trade show for the next ten years of the computer industry.

Clones: The Next Ten Years

Copycats No More, Independent PC Hardware Vendors Come Of Age

BY MARY EISENHART • PHOTO: SUSANA MILLMAN

"Ten years ago people said, 'I'll work hard, and I'll be rich.' Today, we don't just have to work hard, we have to work smart."

—Allen Yu, NBI

Over a decade ago, computer giant IBM looked at the surprising success of the Apple II and various CP/M machines, and decided to go into the personal computer business. Bill Lowe (now at Xerox PARC) and his successor, the late Don Estridge, were charged with developing what was to become the IBM PC.

In distinctly un-IBMish fashion, they were also charged with bringing the product to market within a year. Unable to wait while IBM's research and development wizards designed a machine from scratch, they opted to build the PC largely from off-the-shelf parts and have it run an operating system from an outside source, Microsoft.

The IBM PC essentially legitimized the personal computer market. No longer were the machines the toys of techno-enthusiasts; they became a vital tool, accepted in IBM's corporate markets and revolutionizing the work habits of businesses worldwide.

Over time, the PC's anomalous design history had effects reaching far beyond the immediate change in IBM's fortunes. It allowed Microsoft undisputed dominance of the personal computer operating system marketplace for over ten years. It also, undoubtedly to the chagrin of Big Blue, launched the global PC clone industry.

Today, PC clones account for the largest identifiable portion of the personal computer marketplace worldwide. And the machines have gone from mere copies of the IBM standards to innovative, high-performance equipment, often assembled to a client's particular requirements.

THE FIRST TEN YEARS

For a while, the chief beneficiaries of the burgeoning PC-compatible market were name-brand vendors—e.g. Compaq and other vendors who achieved name recognition and convinced customers that they offered a reliable and cost-effective alternative to IBM. But the existence of an open standard also led to a proliferation of "no-name" On both sides of the Pacific, the growth of the clone industry has created unprecedented opportunities for established vendors to market their products and entrepreneurial innovators to bring improvements to the technology. Where once the primary objective was to simply copy existing technology, innovative custom solutions are now the order of the day. Says Joseph Bentzel, one of the organizers of the first CompuExpo trade show, "If you can guarantee the quality and the compatibility, the next thing that buyers want on every survey is flexibility."

Clone dealers and component vendors have a common problem—there's no shortage of innovative product, but there's a definite bottleneck in getting it to customers in a cost-effective manner. In Taiwan alone, there are thousands of companies that make products for the clone industry, but when international buyers arrive at Computex, the huge international trade show in Taipei, they find the exhibit floor maxed out at 500 vendors, mostly large established firms. They have no opportunity to see the work of small startups.

Peter Lai, marketing director for CompuExpo, explains that if the situation is problematical in Taipei, it's horrendous at COMDEX. Vendors feel that they must be at the show in order to be visible to their customers, but COMDEX has grown to such massive proportions that potential customers never find the smaller companies' booths in the outlying halls. Not only is the cost of COMDEX prohibitive to many clone-product dealers, but the show itself has become more of a consumer extravaganza than a dealer show, its original mission.

Says Lai, "It's no longer a trade show. There's no way people can have time to sit down and talk about deals. And with the recession, you can't afford to go and have people just kicking tires."

So, as the result of collaboration between US-based associations like NBI and SCCCA and Taiwanese companies, CompuExpo was born. Says Lai, "CompuExpo is going to be a *trade* show, a deal show. People can sit down under one roof and talk. That's exactly what the industry is looking for at this stage."

Slated for September 21–24 at the Las Vegas Convention Center, CompuExpo will draw exhibitors from a worldwide pool of vendors, from component vendors to software and chip developers. Timed to allow volume buyers to take advantage of the Christmas selling season, it's aimed at resellers, VARs, system integrators, buyers from superstores and mass merchants, and direct marketers—not to mention MIS types from corporations, goverments, and universities. It's also intended to allow product developers and vendors, large and small, to meet and form mutually advantageous relationships for marketing and product development.

More than just another trade show, CompuExpo is positioned as a broad-based resource for vendors in the clone community. A series of seminars will educate exhibitors about how to get the most from their trade show participation. Conference sessions at the show, instead of being yet another round of talks from industry pundits, will focus on practical topics of interest to the clone industry—e.g. how to take advantage of Eastern European and South American markets, currently in their infancy.

Says Bentzel, "What we're trying to build here is a show for the next ten years of the PC industry. The large brand-name PC suppliers are losing market share, and COMDEX has evolved into an end-user show. What we're seeing is that the compatibles market has 45% of the market. Many dealers today—VARs or system integrators—build their own PCs from motherboard, cases, system integration, and subassemblies, which historically have come from direct sourcing in the Far East.

"Those thousands of resellers want to buy high-quality content at OEM prices, directly face-to-face in the United States. The dealers are no longer served by the big brand-name manufacturers like IBM and Compaq, and are looking for price/performance and compatible solutions." (For information about CompuExpo, call 510/657-3418.) ■

CompuExpo The Global Clone Show

"The first ten years were the years of wild growth, new technology, and domination of the industry by a few 'market leaders.' It was a real gamble, and if you weren't holding the right cards, the industry leaders went home with your winnings.

"The second ten years will be the years of value-added marketing, ever more aggressive price competition, and a wide-open global playing field, where the winners are determined by their willingness to go the extra mile in building customer satisfaction."

—CompuExpo press release

"We could get on the phone right now and call Dell and order a computer exactly the way we want it. All we're doing is allowing the small guy to have the same power in the marketplace."

—Joseph Bentzel, CompuExpo

clones—IBM-compatible machines assembled in thousands of small shops and sold everywhere from the local clone dealer to the neighborhood swap meet.

Initially, clones had varying reputations. Some entrepreneurs (e.g. college student Michael Dell, who started running a clone mail-order business out of his dorm room and saw it grow to a huge, internationally successful market leader) managed to distinguish themselves early for quality products and excellent service. Others became notorious for technical incompetence and outright dishonesty. The industry was, in short, immature.

A common strategy in the early days was to order components from cheap offshore sources, thereby achieving short-term savings and long-term headaches. Edward Shum of Digital Scientific Research in Irwindale recalls how he got started in the clone business, importing parts from Taiwan into his distribution company and reselling them to other dealers. "We had a large customer base, but we could not keep them. Sometimes our products were not reliable. The manufacturers I bought from totally controlled my reputation, and I wasn't controlling my own destiny." If parts failed, it was difficult to track the problem to its source halfway around the world; also, says Shum, in those days many offshore manufacturers simply lacked the technical expertise the products required: "When a product went wrong, we didn't have a clear explanation. Sometimes they didn't necessarily understand the technology well enough—they were copying, not innovating."

And if there were problems at the manufacturing end, things weren't always great in the dealer channel either. Shum's an engineer, but he says that to this day many of his colleagues are impatient about technical details. "They tell me, 'Ed, we are merchants. We want to buy cheap and sell expensive.'"

Mohammed Tahmasebi, of PARS International in Hayward, is an eight-year engineering management veteran of Sun Microsystems. Coming from a technical background, he's heard the horror stories from his customers: "They have been burned so many times by these outfits that come and go overnight, which do not offer service—they can't even speak about service, because the only thing they know is how many floppies you want, how many megahertz you want. The guy probably was selling hamburgers the day before—they come into the computer industry and they do not have the right experience; they have not been trained, and have not been responsible."

But for engineers like Shum and Tahmasebi, the faulty products and dubious expertise of some of their competitors created opportunities for quality-conscious, engineering-driven, customer-responsive vendors. Shum got out of the redistribution business to focus on product development, and now offers a full line of modular-design systems. Tahmasebi provides systems with lifetime labor warranties to corporate and government clients including Sun Microsystems and the University of California.

Says Shum, "The clone industry is really taking off since corporations started using the clone computers. When the Fortune 500, the government agencies, the schools and institutions, started looking at clone products, that gave the clone industry tremendous moral and financial support. The customers have got an education now, and they know what they want. They want performance, they want to pay as little as possible, and they don't have to rely on brand only. The public is getting smarter, which makes the whole thing possible."

RESOURCES:

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(818)912-4733

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Empac International
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National Business Information Center (NBI)
(415)656-3776

PARS International Computer
(510)733-0103

CHANGING MARKETS, SHIFTING CHANNELS

In one sense, the recession has been an unexpected boon to the clone industry, as customers who previously wouldn't have considered non-brand-name hardware discover ways to stretch their shrinking budgets with clones.

And on the other hand, clone dealers found that serving a changing customer base required new, and often conflicting, strategies. Large-volume customers with in-house tech support became enamored of low-overhead mail order operations—as Steve Jobs said in our cover story last month, "One day the purchasing manager at a big company woke up for the first time and said, 'Why are we paying for support twice? We're paying our internal group, and we're paying this dealer.' And they changed their priorities for purchasing PCs to price, price, price."

Edward Shum: "When the Fortune 500, the government agencies, the schools and institutions, started looking at clone products, that gave the clone industry tremendous moral and financial support. The customers want performance, they want to pay as little as possible, and they don't have to rely on brand only. The public is getting smarter, which makes the whole thing possible."

Dealers, meanwhile, often found themselves squeezed between ferocious price competition and their customers' demands for service and support. "I think service to the customer has been jeopardized by price wars," says Tahmasebi. "Over time, I don't think those people will offer an advantage to their customer. Selling to a customer is not just a box. You're not just selling a computer, you're selling a relationship. It's something they rely on on a daily basis. This kind of mentality, of commodity and box-pushing, has turned the computer industry into a toy business. The customers have to understand whether they're buying a toy or whether they want to buy a piece of equipment that's going to benefit them in their business or in their personal life."

ADAPT OR DIE...

"This revolution will make some people obsolete," says Allen Yu, president and CEO of Empac International, and outgoing president

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of NBI, a pioneering clone industry association. "Some people aren't interested enough, they don't know the proper way to run their business. Maybe they'll close their business."

Allen Yu: "It doesn't matter how big or small your company is. What matters is how much you care about your product and your company. You support your customer, you care about your product, you package your product well."

Those in the clone business for the long haul find themselves facing common challenges and banding together to meet them. NBI (National Business Information Center) was born several years ago when Yu and some of his fellow entrepreneurs, who tended to be engineers with little business training, discovered they had common needs. As their companies prospered, they required everything from management expertise to capitalization. As they faced price wars from larger competitors, they needed to pool their purchasing power, for everything from employee health insurance to freight charges. As the market became more professional and sophisticated, they needed to reach their potential customers with the right products.

"Sometimes it's not a money problem," Yu adds. "Sometimes they don't know how to design an ad. They don't know how to find a reviewer for their product. They don't know how to do a new product release, and all the money they put into advertising is wasted. They don't target it properly at the right audience. They spend a lot of money on a trade show, but they don't prepare well. They put together a prototype system on the last day before the show—maybe it'll run, maybe not. Sometimes the system isn't FCC approved. The members came with all sorts of problems.

"They gave us feedback, and the association started having FCC compliance seminars. We have a seminar for marketing and sales—how do do marketing, after-sales followup, how to control their budget at a trade show."

From a small group of about ten companies three years ago, the nonprofit NBI has grown to a membership of three hundred companies, reflecting the increasing complexity of the clone business—wholesale, retail, manufacturing, telemarketing, research, and development. A younger nonprofit in Southern California, the Southern California Chinese Computer Association, is smaller but similar in origin—says newly elected president Arthur Hsiao of Super Computer, "Small clone dealers need to unite together in several

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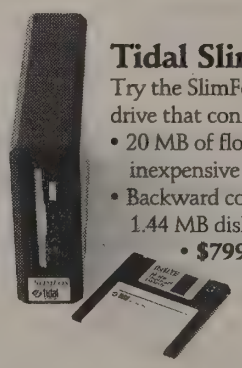

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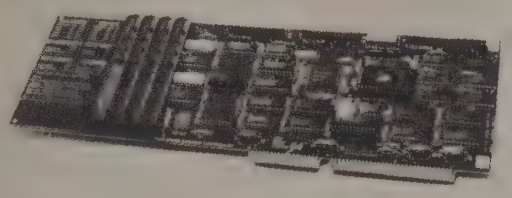

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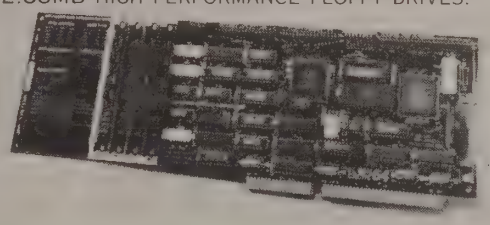

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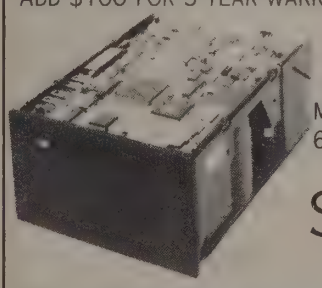

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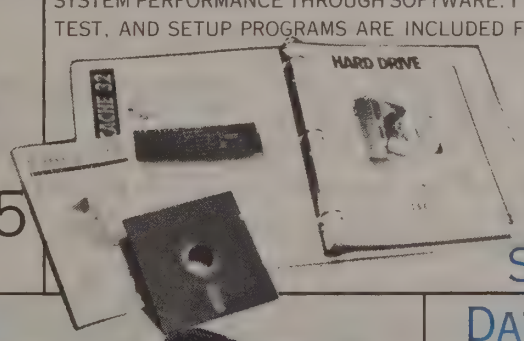

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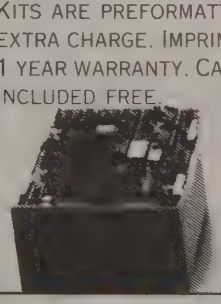

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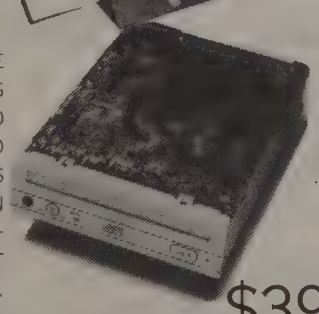

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areas. Then we can compete with the bigger companies." CompuExpo, slated for September in Las Vegas (see sidebar), is a natural extension of the needs expressed by NBI and SCCCA members.

Yu maintains that a vital part of success in the clone business is adapting to fit the needs of your various customers. For him and for others in the clone business, this has meant a multichannel strategy, of which the traditional storefront operation is only a part. He explains, "Now the business exists on several different levels. In 1980, we needed two-tier marketing—how to sell a distributor and go to the middleman. Now it's the 1990s, and we go to direct marketing.

"Maybe we don't need the middleman—the reason is that the life cycle of computer products is too short. If we take three or four months to market a product, maybe that product is obsolete already. We have to have direct support from the manufacturer to the user, either corporate user or end user or VAR. Maybe we have to go to direct marketing so we can monitor the whole situation better and support better.

"The US is too big. Some of the regions you just can't reach. Ten years ago I lived in a small town in North Carolina. When I want to get anything, I go to Sears. That's the country style. For that kind of customer, you have to have a mail order business.

"In some of the larger cities, people are well educated and know how to use computers, but they don't have too much time to play with it. If they have a problem, they want to fix it right away. That's why you need a retail store to provide direct support locally. But in the countryside, people have a lot of time. If the computer breaks down, they can wait. No problem. They send it out to the service center and back. We don't need a retail store in that kind of area.

"I try to direct support to the user. A lot of VARs buy our machines to resell to the user, but we do have convenient locations for them to upgrade and service their systems."

He agrees that a more demanding customer requires a more sophisticated vendor and a more competitive product, and sees a major part of NBI's function as educating its membership on the costs of cutting corners and the importance of adding value.

"Why do hardware vendors try to cut corners and sell cheaper?" Yu asks. "This industry is too young. People don't know what to do—the first thing in business is to want to survive. They think it's better to sell than not to sell, that's why they cut the components down to a level where you can't control the quality, and that makes the industry worse.

"What we're trying to do is educate those guys. If you have hardware, it's not good enough. You have to have applications. You have to have good documentation. User-friendly—they turn the power on and then the screens help them to run. The documentation has to be readable for entry-level people.

"Ten years ago my secretary knew how to use a typewriter real fast, but she wouldn't touch a computer at all because she was afraid of it. Now, all the secretaries, if you give them a typewriter, they will throw it away. They need a computer.

"That is a cycle—you need to change. People are well educated—the computer is their tool. Even a family or a small business can't survive without a computer. We have to make it more simple for them; we need a lot of application software to support them.

"It doesn't matter how big or small your company is. What matters is how much you care about your product and your company. You support your customer, you care about your product, you package your product well." ■

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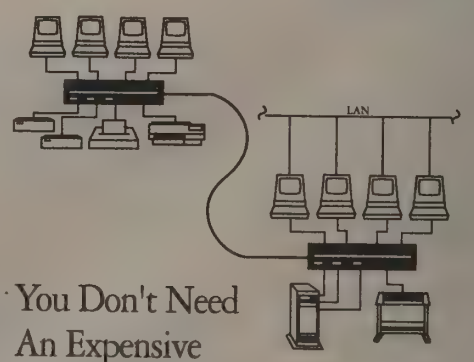

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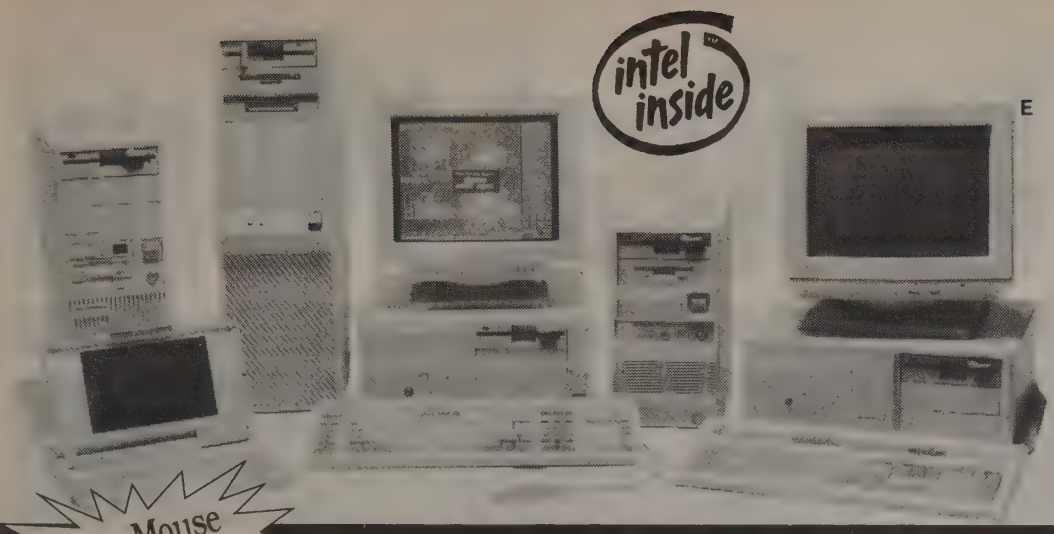

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NeXT In The Real World

Part II Of The MicroTimes Interview With Steve Jobs · By John Perry Barlow

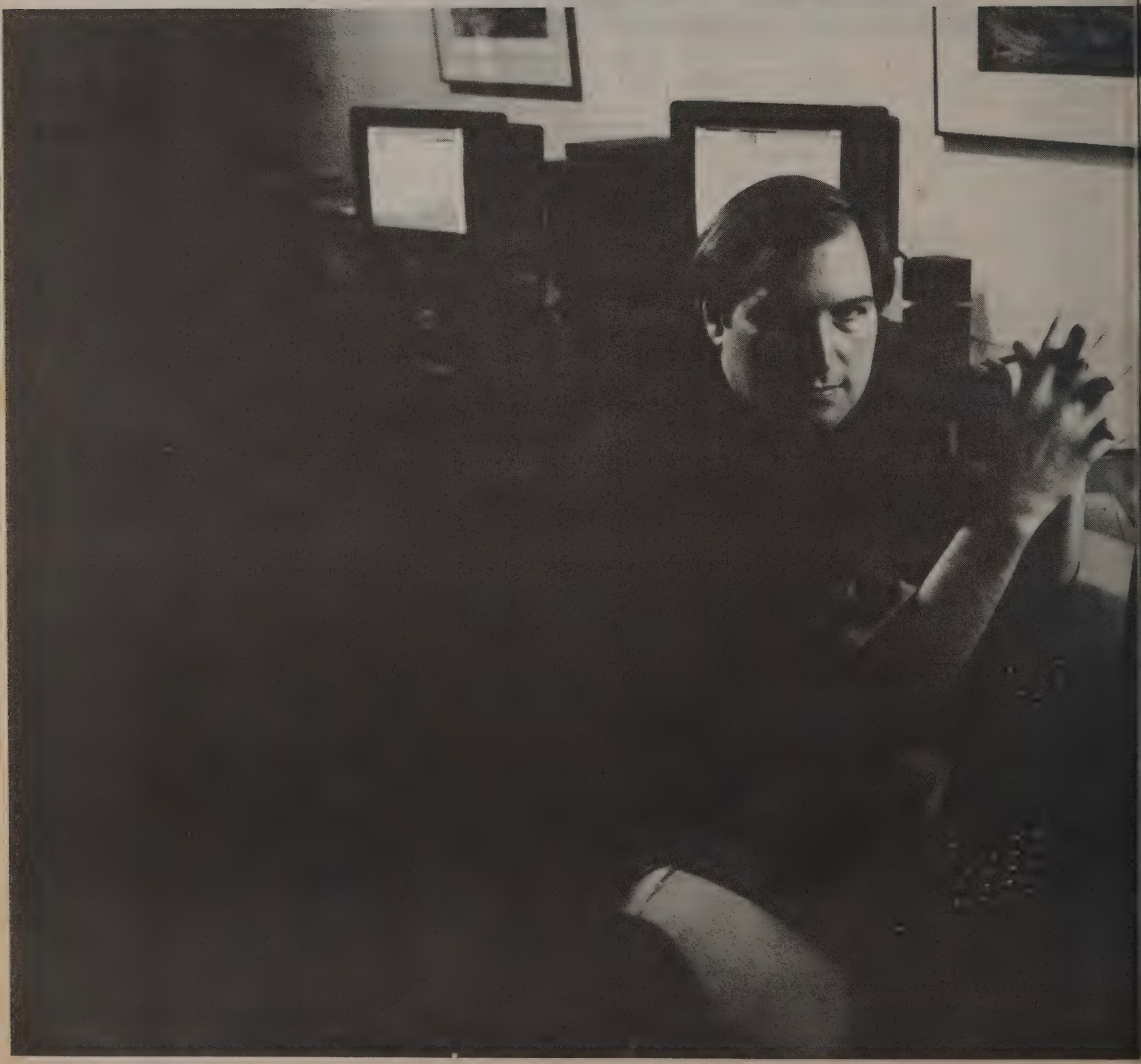

PHOTO: T. McCARTHY

EVERYTHING IS CHANGING ALL THE TIME.

At that point in early December when I had the following conversation with Steve Jobs (the first half of which was published in *MicroTimes* last month), the world around NeXT looked different to me in a lot of subtle ways.

For one thing, I was still somewhat unpersuaded that their bold, new marketing plan—selling NeXTstep as an environment for developing custom applications—wasn't yet another way to shovel smoke. After all, NeXT has had, depending on how you count 'em, at least five bold, new marketing plans over its existence, each touted with equal fervor, and each more ineffectual than the last.

Then there was Jobs himself, who, in his actions leading up to this conversation, seemed as compulsively elusive and manipulative as he is sometimes reputed to be.

But I'm writing these words toward the end of January, in the immediate afterglow of NeXTworld Expo. During the course of this event, a couple of things became clear to me.

NeXT is going to make it, and possibly make it big

Their perceived new market actually does exist, and, more to the point, it knows that *they* exist. NeXTworld was crawling with sober, suited individuals who gave no appearance of being there on some kind of cyber-cultural lark. In evidence were all the warning signs of MIS. While my own personal enthusiasm for their arrival was restrained by my blind prejudice against suits, they're like the 7th Cavalry as far as NeXT is concerned.

Furthermore, assuming that their port of NeXTstep to the Intel architecture really does work as seamlessly as it appears to, they may be able to grab a commanding lead in the Operating System of the Future contest before the systems heretofore regarded as the Real Contenders—Big Pink, Windows NT, and Solaris—have condensed out of their current vapors.

In general, NeXTworld, and the product announcements it showcased, made NeXT seem like a much more credible and mature company than the kind of company which might, for example, actually expect to sell computers without floppy disk drives.

There is, once again, a New Steve Jobs

Over the course of his career, this shape-changer has gone through more metamorphic revisions than one generally achieves outside the insect kingdom, but he has finally entered one in which he is starting to look comfortable.

His two-and-a-half-hour presentation at NeXTworld still contained some auto-Barnumizing. At one point, the respected Mac pundit in the seat next to mine muttered, "If this guy had been born in Alabama, he would have been bigger than Swaggart." And I didn't have to ask him what he meant by that.

And yet... And yet what amounted to the third NeXT product introduction contained little of the Wagnernian theatricality which caused the first two to feel less like a computer intro than Albert Speer's staging for the Rally at Nuremburg. This time, there was a lot

more steak than sizzle. Jobs was calm, relaxed, conversational. He didn't appear to be hiding much behind the glitz of his presentation.

The products themselves were certainly meat and potatoes. There was v3.0 of NeXTstep, which contained advanced abilities for transparent group endeavors over EtherTalk and Novell networks, a highly adaptable database tool kit, 3-D modeling support based on Pixar's Renderman, and system integrated ISDN so that one's NeXT at home could feel part of the office network, even though connected to it by nothing but standard copper phone cabling. There were many other incremental improvements too small to detail here, which will nonetheless solidly enhance the already well integrated NeXT working environment.

He also introduced a great and inexpensive ($3500) color printer using PostScript 2 and Pantone colors, a 40% increase in hardware performance (with a 33MHz '040 CPU) at no additional cost, and a new CD-ROM drive to be used, among other purposes, for loading the new system software. All pretty prosaic stuff by NeXT standards, but, well, grown up.

Which is pretty much how this new Steve Jobs comes across. He is, after all, a brand new father, a condition which usually stimulates the maturity glands. On the second day of NeXTworld, Jobs spent the afternoon wandering the show floor, openly available to anyone who sought his ordinarily hard-gained company. He was amiable and engaged. And obviously very happy with the way things were going.

Though this conversation took place much earlier, some of that genuine confidence is in evidence here.

With the greatest reluctance, I recently ordered a PowerBook 170. I hated to do that, since my Macintosh has been reduced to being sort of a dedicated QuickDex server, but my NeXT...

But you need a portable.

Exactly. Can you give me any sense of where we stand there?

I can. Stay tuned. We're working on some stuff in the lab. There are a few directions we're going in.

What most of our customers tell us is that they don't need it to run on batteries, they just need it to be really transportable.

Just transportable. That's how I feel.

That's pretty much our philosophy right now. There are a lot of things that are the enemy of running on batteries, like a big screen. Like a bigger hard disk that uses more power. Like a faster CPU that uses more power. Things like that.

So what our customers are telling us is that they want to be mobile, but they can live tethered to a 110V outlet.

Let me shift to connectivity and standards for connectivity. I'm concerned that the market doesn't realize the extent to which you're already meeting standards.

I agree.

I mean this looks like a good document [referring to a PR document about NeXT and standards] , but I get skeptical questions about this every day. For example, I hear things like: "Objective C is a dead language, regardless of its merits. NeXT has bet on Objective C." Or they'll say, "NeXT Berkeley UNIX is not exactly parallel to Sun Berkeley UNIX." I haven't run across anything that won't compile yet, but I hear these things... Is this all just idle slander and gossip, or is there something to it?

The two biggest things you hear in the industry are "which chip are you using?" and "which version of UNIX do you have?" Then there are minor ones beyond that.

And my view is that these are the battlegrounds of five years ago. It really mattered what chip you used five years ago. It really mattered what version of UNIX you had five years ago. Those things are not the battlegrounds of today.

When you write an application for NeXT, 5% of what you see is UNIX. Ninety-five percent of what you see is NeXTstep. Open/close, read/write commands are the same in every version of UNIX, and that's about all you see in NeXTstep. So it doesn't matter what version of UNIX you're running any more, and it doesn't matter what chip it's running on. NeXTstep's running on several processors right now. What matters is, what does the application developer see? What's your application development environment?

This is my point of view. You couldn't even tell me what operating system Macintosh used, right? So I guess to me the people that are worried about these things... well, they don't seem to be the customers, because we don't run into these problems with customers at all. And if we do, we have them talk to a technical person for a few hours and their concerns evaporate. It seems to be people on the sidelines who have these five-year-old ideas stuck in their brain. Their light bulb hasn't gone on, in terms of what's really important today.

I think you may be fundamentally right about the irrelevance of these distinctions, but as you have seen many times, there's an amazing willingness in the computer industry to adhere to blind fashion.

But see, that's not who our customers are going to be. Our customers are going to be early adopter corporate and government workstation customers. And we shouldn't spend our time trying to persuade every last person that we're using the right chip or that we're using the right version of UNIX. What we should do is go with those early adopter customers who can grow our company to a half-a-billion to a billion-dollar company, and let our success demonstrate that those issues don't matter any more.

Continued

NeXTworld was crawling with sober, suited individuals who gave no appearance of being there on some kind of cyber-cultural lark. In evidence were all the warning signs of MIS. While my own personal enthusiasm for their arrival was restrained by my blind prejudice against suits, they're like the 7th Cavalry as far as NeXT is concerned.

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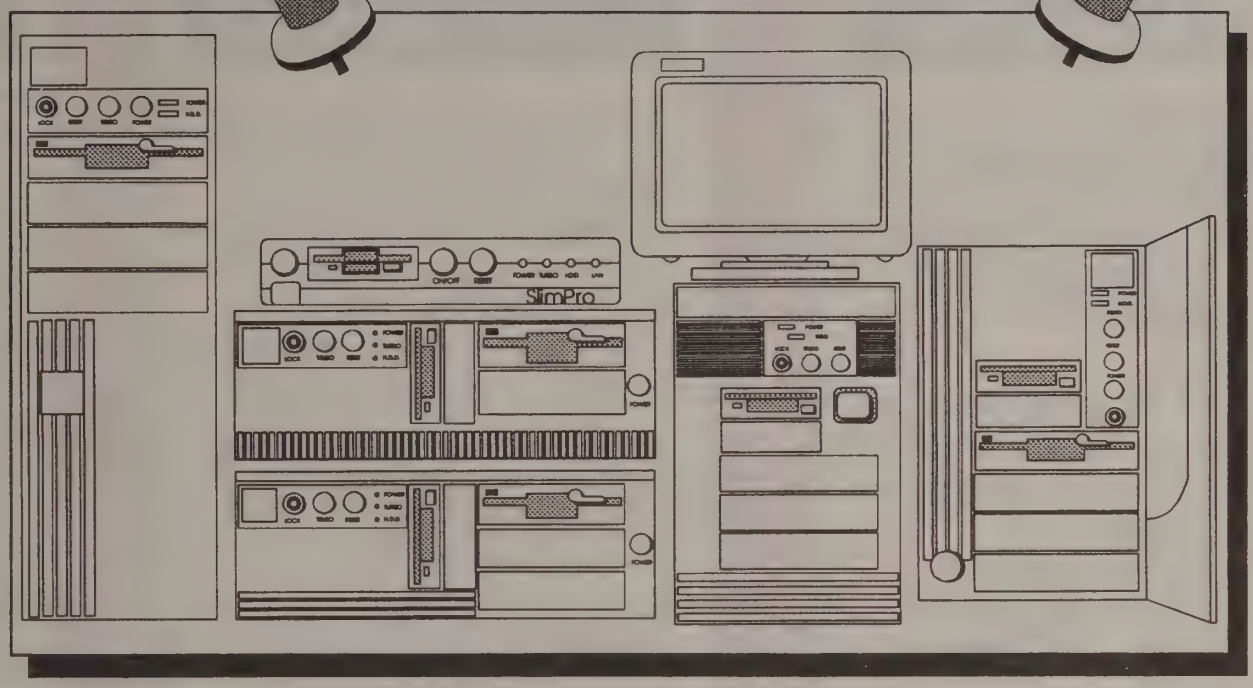

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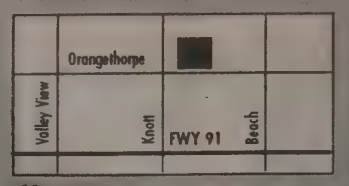

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Corporate customers started buying workstations two or three years ago. They started buying Suns, as did the government. And they bought them to write their mission-critical custom apps on. You don't buy a Sun to run productivity software on, right? Wall Street was one of the first early adopters. And we're walking in right now, and 90% of the time we compete against Sun we're winning.

Why? Because what do you buy a Sun for? To develop custom apps on. NeXT can do it five to ten times better. So we're winning right and left. Not in the scientific and engineering world—we don't know anything about that. But in the commercial and government arena, we're winning right and left.

I worry about things like this, though. [Waving a copy of Networking Today at him.] There's an article in here called something like "Will UNIX ever succeed on the desktop?" They are basically telling their readers in corporate networking to wait for whatever comes out of Big Pink and Solaris, because that's what you've got to have. And they're touting all the virtues that will be derived from Solaris and Big Pink someday, and not saying anything about NeXTstep, which is shipping with them now.

Give me that magazine. We'll call them up. *[Grabs magazine and reads the whole thing in about 15 seconds.]*

I was alarmed by this. Because this is really your market, in many respects, and they don't know that you exist.

Well, this magazine doesn't know that we exist. But our market is starting to hear about us. But we'll call these guys up. This is wonderful. We'll fix it.

But to get back to the chip issues, I was on a plane recently with one of Intel's main men. He said, "You ever see Steve Jobs?" I told him about this interview coming up and he said, "Well, I would be appreciative if he would come around and pay us a visit. We've got something that he really ought to be using."

What is that?

A chip under development.

The 586. Yeah. Sure. Intel's over here once every month talking to us about that. We knew about the 586 a long time ago.

Well, I knew you knew about it, but apparently he doesn't realize there's been this kind of conversation.

[Intel CEO] Andy Grove and I have known each other for fifteen years. And we talk a lot. We're very aware of that stuff.

I think a lot of people are concerned that CISC chips in general have reached a point where they can't go much further.

Well, the 586 is a CISC chip, for the most part. It's sort of a combination. So's the '040. They're all combinations. The RISC/CISC stuff is 90% marketing and 10% reality.

I think we evaluate things on one simple benchmark—how fast is it? I don't care if it's a little hamster in there on a treadmill—how fast is it?

So far you're running faster than most garden-variety SPARCstations.

Well, and you'll see us very shortly catch up with SPARCstation 2's. Very shortly. So the '040 is a fine chip. It runs as fast as the SPARC stuff. Yes, there are faster chips, and you'll see us do things with other processors in the future. But they'll all run NeXTstep.

How do you deal with something like the Indigo? I gather that that's now a sort of orthogonal consideration.

We never see the Indigo out competing in the real world. We've never seen the Indigo in one corporate account, competing. I think the Indigo's selling to [SGI's] traditional base.

Right. The SIGGRAPH types.

The 3-D modeling types. Yeah.

Which is another question I've got. You've got a relationship with Pixar—

Right.

And I keep thinking that there's an obvious tie-in at some point along the line. Not just for professional 3-D graphics. It seems like the interfaces themselves are getting increasingly three-dimensional.

I agree with you. Our NeXTstep release 3.0—which is going to ship in March or April—is going to come bundled with several things. One is our DBkit, our database kit. Another is Novell client support, so you can hook up to any Novell network and automatically map that right into the UNIX filesystem. Ethertalk, which we've written ourselves, so you can just hook it right up to an Ethertalk network and we map that all into UNIX—nobody's ever done these things before, by the way.

Jobs: "The two biggest things you hear in the industry are 'which chip are you using?' and 'which version of UNIX do you have?' My view is that these are the battlegrounds of five years ago. It really mattered what chip you used five years ago. It really mattered what version of UNIX you had five years ago. Those things are not the battlegrounds of today."

That all comes in the box.

Another thing that comes in the box is Renderman. Photorealistic Renderman is bundled.

With an interface?

Well, let me keep going. Photorealistic Renderman is bundled, so that you can use it to do photorealistic rendering, the same thing you pay a lot of money for on other platforms. We've got all the printing and everything working with it, so you don't have to think about that, which is something nobody else has done.

But we did something else that's quite nice. As you recall, when we did the Mac we had QuickDraw for the screen and PostScript for the printer, and that was a real problem.

It continues to be.

It continues to be. So when we did NeXT, we adopted a unified imaging model for 2-D geometric graphics in PostScript. That solved an enormous number of problems. One of the biggest problems it solved was that it saved developers months of time, because they don't have to translate between one and the other and read these two big, thick manuals to get something to print.

Well, the same sort of dichotomy exists in the 3-D marketplace. You can have PHIGS for interactive graphics, or GL. But these are very primitive standards. You should be able to do better than those now, but in the future it gets worse. Because ten years from now we'll have the CPU performance to run photorealistic Renderman in real time. So during that ten years we want to incrementally get better.

Well, PHIGS and GL and that stuff will not get better. The architectures are not going to get much better. So you're going to have to throw them out and get better 3-D packages a few times during the '90s, and every time you throw the package out you throw all your apps out.

So we thought, what would be the right solution? The right solution would be to have an interactive Renderman, and then as the '90s progressed, leave a few more of the switches on that can run in real time, until eventually all of the switches are on. So we went to Pixar just like we went to Adobe, and we worked with them to create an interactive Renderman, and it's bundled with 3.0. It's wireframe on the 040s, and it gets more interesting on other products.

That's not modelers. We're not going to write a modeler, because we don't want to compete with the third parties. But all the underpinnings are there to do some wonderful things in 3-D in the next few years.

Let me talk to you a little about multimedia. I just interviewed John Sculley. He talked about Kaleida and their intention to develop a set of authoring and architectural standards that anybody could plug into.

Uh-huh. But see, standards are actually developed.

Well, I understand that...

Like fifty million CD players shipped. That's a pretty compelling standard. MPEG is a pretty compelling standard.

But there are also twenty-four different formats that a multimedia author could choose to publish in at the moment, which divides up a pretty small market.

Oh, I agree with that. But the actual data representations are chosen more by the consumer products industry than they are by the computer industry. MPEG is an example. It's going to be a pretty compelling video format.

This gets us to something I wanted to ask you about—I'd still like to see that compression chip on the NeXTdimension board.

Well, as you know, C-Cube conked out. We now have the boards—the hardware boards are done, and they've given them to our software group, and as soon as they get some software up on them, you'll see it as a product. But we have some much more exciting stuff than that in the lab. We'll do all of it.

I actually think the QuickTime stuff is not a bad idea, but the implementation is very poor.

It's trying to do too much in software on a machine that doesn't have the juice to do it.

Or they took the wrong software algorithmic approach on it entirely.

That may be. Well, would you be willing to support something like QuickTime?

QuickTime will never reach the kind of quality that people are going to look for. The algorithms of implementation are fundamentally flawed. The concept of having an open system like that is something we support entirely—as a matter of fact many people have come to us asking us to license some of our existing multimedia technology, and in almost every case we do. Sun's sound compression formats are the same as our current ones, although we're rolling in a new one for 3.0. We found a way to compress CD sound to data rates that are Codec data rate. Imperceptibly. You can take stereo CD sound, compress it down to Codec data rates, and you can't tell the difference. It's a wonderful thing. It's never been done before, all in software.

We unified all our sound formats into one format. We don't need all those different quality level ones now, because our best quality now has the data rate of our lowest quality one. So we're unifying all that into one format, which is going to simplify our lives enormously. We'll be willing to license that, as we have a lot of others.

I think you're going to see video over the Net fairly soon, and it's probably going to be in a QuickTime format, to start out with. I mean, if all you're trying to do is get a video box to pop out of your email, you're willing to suffer some crudity.

Jobs: "It doesn't matter what version of UNIX you're running any more, and it doesn't matter what chip it's running on. NeXTstep's running on several processors right now. What matters is, what does the application developer see? What's your application development environment?"

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Unless you can have something quite a bit better.

Yeah. If you can have something quite a bit better that you can actually communicate with somebody else on...

Well, right now QuickTime only runs on the Mac, so it's the same problem.

Right. But there are a lot of Macs out there.

Sure there are.

Of course, if your vision is achieved, there'll be a lot of NeXTs out there.

We're going to be willing to license our stuff in the same way, and my guess is it'll be substantially higher quality.

Well, it is now, for whatever that's worth. What I can do with a video camera and a NeXTdimension board, even without the compression chip, is pretty extraordinary.

Just wait.

This relates to a problem I have with NeXTmail. I love NeXTmail, but I constantly feel like I've got a great operatic voice in the country of the deaf. I want to be able to communicate with everybody in NeXTmail, but I can't. For example, I have no ability to communicate with people on Sun workstations...

Well, you do with text.

I do with text, but I want more.

But see, Sun can't play the music. And Sun can't open the Improv files. So what else do you hope to do?

If we could change the file format around, let's say we could instantly change it to whatever you want, what would you do with the information once you got it to your Sun?

Well, I would hope that there would be some joint effort between companies like Sun and NeXT, to find a lingua franca.

We are open to that.

Perhaps something like Carousel, Adobe's new document description language...

Oh, of course we will support that. That's just a subset of PostScript, so we'll be the first company to support that, because we already do.

We've held out the olive branch to Sun and said we'd love to work together with them on this stuff. So go ask them.

You're a brand-new father.

Yeah.

When that happened to me, it redefined my whole sense of purpose in life. What is your mission now, in the broad sense of the word?

What is my mission?

What kind of world do you want to help create for your kid?

I have felt for most of my adult life that I'm a tool-builder. The things I have chosen to build are not things that can be done by a sole artist. That's a wonderful thing—many times I am envious of people that have chosen those paths, because one can be a perfectionist and have complete control of something yourself.

But what I've chosen to do requires the efforts of hundreds, if not thousands, of people. So I consider myself the tool-builder that works with a large team of people to build tools.

I've been through a few generations of tools in my adult life—the Apple II, the Macintosh, and some in between that didn't work out so well. This is our third generation of tool.

And unlike a lot of people who think the computer industry's maturing, I think it's in its infancy. I think there are technological breakthroughs that happen once every ten years, maybe. Sometimes a little more frequent, but not too much. And that those technological breakthroughs have the force to reshape the tools that we build, and to reshape the industry along with them, as certain companies pay attention to them earlier and certain companies wake up fairly late.

So my mission right now is to try to help seize these new technological breakthroughs that we've had, and to steer them right, into some wonderful tools for people to use. Sort of the third generation of tools out there, the first being the character mode PCs, the Apple II, and then the IBM PC. The second being the graphical, pretty much standalone computers, like Macintosh and now Windows. And the third being these highly networked environments where expressing your desire in a custom app is going to be a lot less painful than it's ever been before. And these things interoperating together.

I don't even fully understand it yet, just like we didn't fully understand Mac in 1984. But you get the feeling, and you recognize it after it's happened a few times, that you're on to something really big.

And that's how I feel right now.

So our goal is to try to fashion this stuff into the most wonderful tools we can. And then to listen to the people using them—maybe more than we have in the past—to let them help us.

That's what we're trying to do. We'll see where it goes. ■

Jobs: "Ninety percent of the time we compete against Sun we're winning. Why? Because what do you buy a Sun for? To develop custom apps on. NeXT can do it five to ten times better. So we're winning right and left. Not in the scientific and engineering world—we don't know anything about that. But in the commercial and government arena, we're winning right and left."

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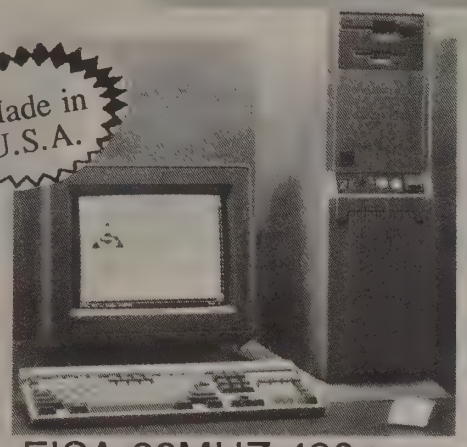

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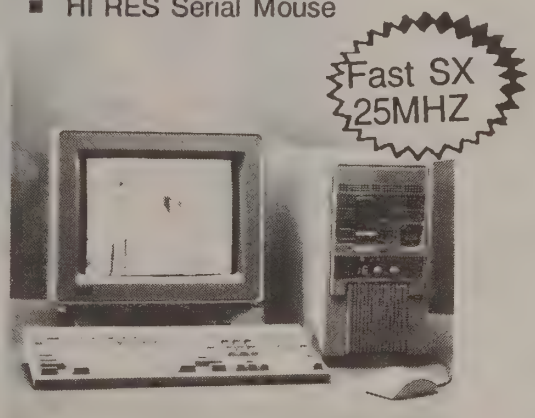

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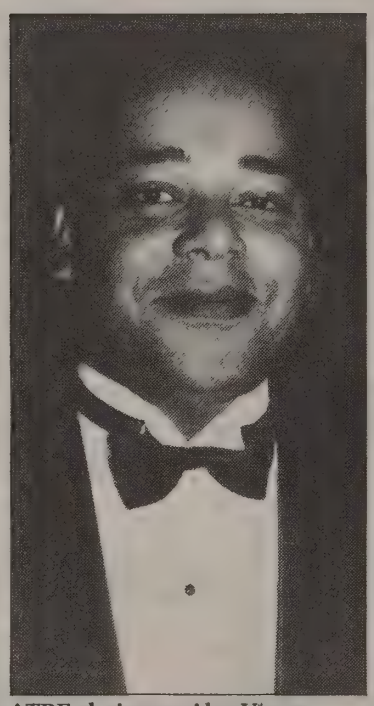
ATRE Conference Fosters Pacific Rim Connections

By Mary Eisenhart



ATRE chairman Alex Vieux

"The biggest growing consumer market in the next ten years is Asia. Both companies and individuals are going to buy more computers, more software, more networking tools.
"I hear a lot of pessimism out there. But they want to have American products. The glamour of American products is as important to computer buyers as the glamour of the French product for perfume buyers. People love American computer software. Workstations sell like crazy—ask Sun. They're making 30%, more than that, out there. There's a big opportunity. This is a growing industry—it's not a mature industry yet."

—Alex Vieux

Global business is clearly a significant trend for the computer industry. Established giants like Microsoft, Apple, and Novell now do the majority of their business outside the US; some vendors—e.g. Commodore and Atari—have a far greater presence in foreign markets than in their home country. And, for West Coast companies in particular, the Pacific Rim presents challenges and opportunities.

Alex Vieux knows high-tech and world markets. The son of a French diplomat, he founded two Silicon Valley-based software startups and serves as an advisor to the French Minister of Industry. One day a few years back, while attending one of the relatively numerous industry summit conferences in the US, he realized that while American companies could take advantage of any number of such events, there was a complete lack of them in the European and Asian areas. So he decided to do something about it, and founded ETRE, the European Technology Roundtable Exhibition. After two highly successful European conferences that brought together CEOs and other top executives from US companies (e.g. Microsoft's Bill Gates, Borland's Philippe Kahn, Oracle's Larry Ellison, and IBM's Jim Cannavino) with their European counterparts—and with leaders of small startups on both continents—Vieux is now launching a new conference in Japan to address the emerging needs of Pacific Rim markets.

ATRE, the Asian Technology Roundtable Exhibition, is scheduled for May 31–June 3, at Club Med in Sahoro, Japan. As with ETRE, participants will be carefully selected from among the pool of applicants to ensure a good balance of technology, as well as a synergy-enhancing mix of established and younger companies, large and small. Discussion topics at the sessions will include such issues as international sources of financing, the evolving relationship of consumer electronics and the computer industry, and tips on forming strategic alliances—a key element in world-market success. The schedule will also include plenty of time for private meetings—to say nothing of a karaoke party (an important part of Japanese business culture!).

Vieux explains, "We foster the spirit of cooperation among companies engaged in worldwide competition."

Particularly for smaller companies who, in other times, wouldn't have even considered their global market opportunities, the conference offers an unprecedented opportunity to show their wares to world industry leaders and find strategic partners to help with their expansion into other countries, in a setting conducive to in-depth conversation rather than sound bites. (Not to mention cutting through the red tape—Vieux tells of an entrepreneurial ETRE participant's delight in being able to get direct feedback on his company's prototype product from Bill Gates.)

For companies exploring their global opportunities, particularly in Asia, Vieux counsels against the American preoccupation with speed. Don't be in a hurry, he says. Do your homework. "Try to know if the people you're talking to are the best people in the market—shop around. When you go to buy a computer, you shop around. When you go to sell your computer, you should shop around even more."

"The biggest growing consumer market in the next ten years is Asia. Both companies and individuals are going to buy more computers, more software, more networking tools."

"Don't be shy. If you have a great product, people will want it. Be there for the long run. Create your own roots and contacts."

Also, it's important to be aware of and respect the differences in national cultures. "To talk to a Korean as if you were talking to a Japanese is a big mistake. To talk to a Taiwanese as if you were talking to a Korean is a big mistake. What makes them tick is different, just as what makes an American tick is different from what makes a Canadian tick."

Going global calls for entirely different strategies from success in the US market, and, says Vieux, those who manage to do as the Romans when in Rome will prosper. It's a process of finding the right partners and capitalizing on your respective strengths.

"We are not in a deficit position vis-a-vis any Asian manufacturer," says Vieux, "either in creativity, or in money, or in effort, or in discipline. We just have to adapt the process to the market, and once we do it, we're going to succeed." ■

For information about the ATRE (or ETRE) conferences, contact DASAR Inc. at (415)321-5544; fax (415)321-5597.

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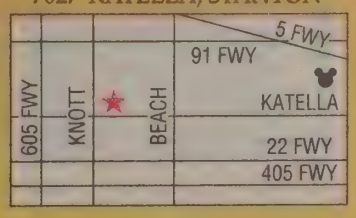

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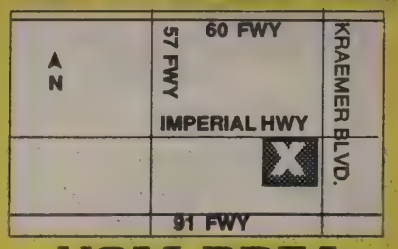

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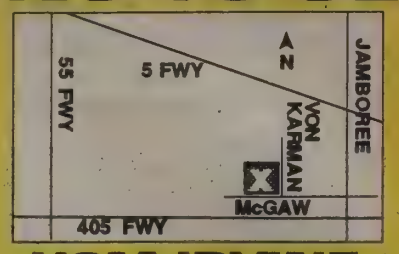

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386-40/64k Cache	210	380	540
486SX-20C	190	400	580
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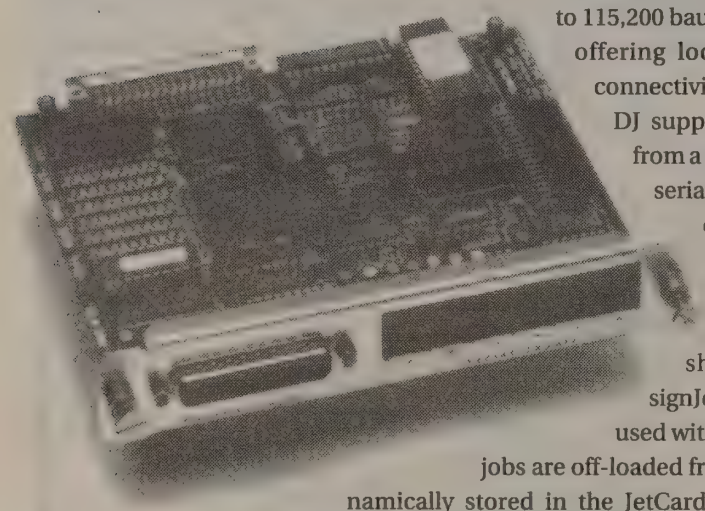
New Products

NETWORK HARDWARE

JETCARD/DJ PLOTTER SHARING

The JetCard/DJ, specifically designed for the HP DesignJet plotter, provides high-speed, transparent, and concurrent data spooling for up to seven users. This interface card plugs into the modular I/O (MIO) slot of the HP DesignJet, eliminating the need for a power connection. Four of the six serial ports support data transfer up to 115,200 baud. In addition to offering local work group connectivity, the JetCard/DJ supports connection from a LAN through the serial or parallel port on the server, thus enabling LAN users to plot on the shared HP DesignJet plotter. When used with a LAN, the plot jobs are off-loaded from the LAN, dynamically stored in the JetCard/DJ buffer, and plotted on a first-in, first-out basis along with the jobs from all the users directly connected. ($995 with 2MB buffer, $1195 with 4MB buffer) Excellink, Inc., 1430 Tully Rd., San Jose, CA 95122-3058. (408)295-9000.



10BASET CONNECTOR

The CompuLAN TPC8800 Ethernet 10BaseT connector provides eight RJ45 ports for connection to unshielded twisted pair wiring, one BNC port for backbone or mixed media networks, and one cascading port for parallel connectivity expansion. It features automatic partitioning and reconnection in the event of a network segment failure. The TPC8800 meets the IEEE 802.3 10BaseT and 10Base2 standards, and carries a two-year warranty. ($469) CompuLAN Technology, Inc., 180 Charcot Ave., San Jose, CA 95131. 1-800-486-8810.

PC HARDWARE

FONTMASTER CARTRIDGE

The FontMaster Cartridge for HP LaserJet printers comes with the Kelly Font Library of over one hundred fonts and

Continued

PRODUCT UPDATES

➤**Aldus** released **SuperCard 1.6**, the update for its Macintosh multimedia authoring application. Registered owners can purchase v1.6 for $50, plus applicable tax and shipping. Customers who purchased SuperCard 1.5 after June 26, 1991, will receive the update at no charge. Aldus Corp., 411 First Ave. S., Seattle, WA 98104-2871. (206)622-5500.

➤**Brøderbund Software** released **Typestyler 2.0** of its type manipulation program. The upgrade cost is $25. Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA 94948-6121. (415)382-4400.

➤**Claris** lowered the list price for **MacWrite II** to $129—a $120 savings off the previous list price of $249. US owners who purchased MacWrite II between April 1, 1991 and January 31, 1992 may be eligible for a free upgrade to **MacWrite Pro**. Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA 95052-8168.

➤**Great American Software** is offering a **limited-time Competitive Upgrade Program** for users interested in upgrading from other accounting software packages to **One-Write Plus Accounting**. The price for the Competitive Upgrade, through April 15, 1992, is $89.95, with an additional $40 rebate with proof of ownership. Great American Software, Inc., 615 Amherst St., Nashua, NH 03063. (603)889-5400.

➤**Radius** lowered the list prices for the PC version of its **Full Page Pivot display** (previously $1249, now $999) and **SVGA MultiView interface** (previously $449, now $349). The bundled price has also been reduced to $1249 from $1698. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. (408)434-0770.

➤**Intuit** released **Quicken for Windows 1.01**. Intuit, Inc., 155 Linfield Ave., PO Box 3014, Menlo Park, CA 94026-3014. 1-800-624-8742.

➤**Streetwise Software** released two versions, **By Design v2.0 for DOS** and **By Design for Windows**, that significantly upgrade its desktop WordPerfect add-on publishing software. Streetwise Software, Inc., 1227 18th St., #B, Santa Monica, CA 90404. (213)829-7827.

➤**Tallgrass Technologies** announced shipment of **NetSecure v4.0**, its server-based NLM network backup solution. Tallgrass Technologies Corp., 11100 W. 82nd St., Lenexa, KA 66214. (913)492-6002.

➤**Tatung** introduced an upgrade program for **SPARC workstations**. This upgrade replaces an existing motherboard with a Tatung 40MHz motherboard. Tatung Science and Technology, Inc., 2060 Ringwood Ave., San Jose, CA 95131. 1-800-659-5902.

➤**Timeslips** announced **Timeslips III for the Mac v2.1**. Single users can upgrade for $49.95 and network edition users can upgrade for as low as $79.95. Timeslips Corp., 239 Western Ave., Essux, MA 01929. (508)768-6100.

➤**Wyse Technology reduced prices** on six of its personal computers, including the **SC PCs**, two **486-based models**, and the **DecisionMate** notebook computers. Wyse Technology, Inc., 3471 N. First St., San Jose, CA 95134. (408)473-1200.

➤**XTree** now offers customer support on **CompuServe** twenty-four hours a day, seven days a week. Located in CompuServe's PC Vendor E forum, this provides a convenient way for users to get online help. XTree Co., 4330 Santa Fe Rd., San Luis Obispo, CA 93401. (805)541-0604.

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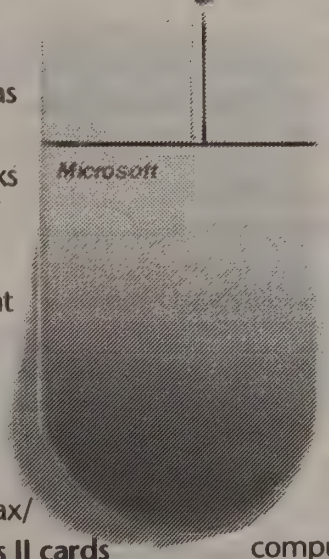

BitFax for Windows works with just about any fax/modem card. It's **compatible with all EIA Class II cards** including AT&T, AST, Best, Cardinal, NEC, TI, Sharp, Zoltrix, and Zoom to name a few.

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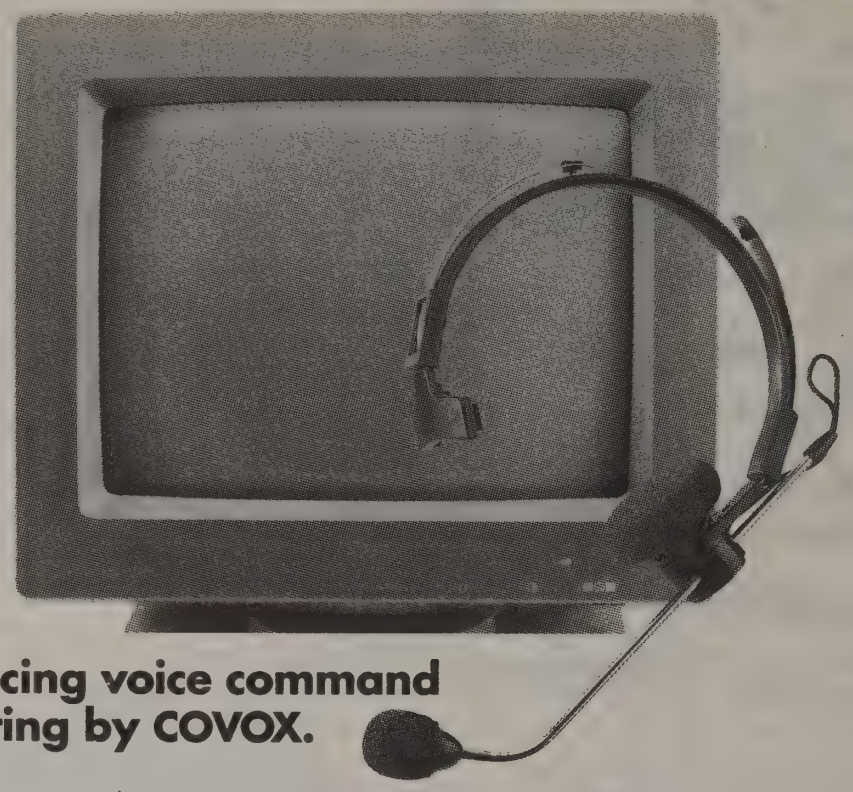

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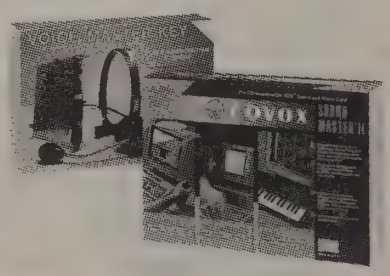

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View, CA 94034. (415)960-0154, 1-800-934-2000.

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BetterYet III is a PCL-5 emulation cartridge that upgrades HP LaserJet Series II printers to Series III compatibility. This plug-in cartridge provides a cost-effective upgrade solution that's easily installed into a font slot, and allows offices to standardize their equipment on LaserJet III levels. It features the same

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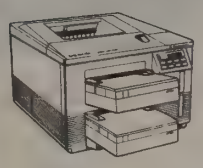

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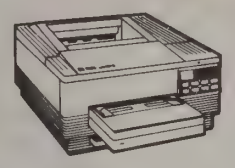

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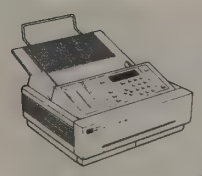

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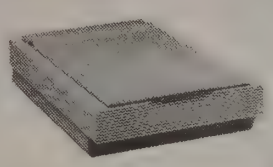

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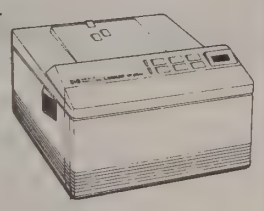

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Intellifont scaling technology found in LaserJet models, ensuring 100% font compatibility. A second version is available for HP LaserJet IID and IIP users. ($299) Output Technology Corp., E. 9922 Montgomery Dr., Spokane, WA 99206-4199. 1-800-238-7938.

PC SOFTWARE

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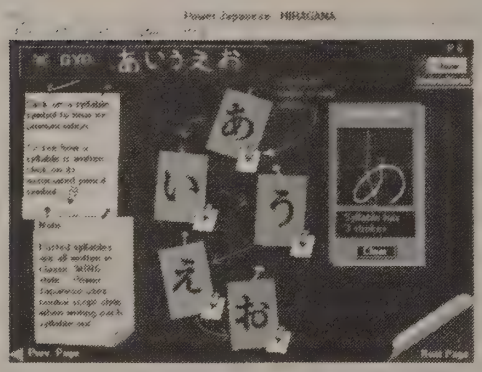
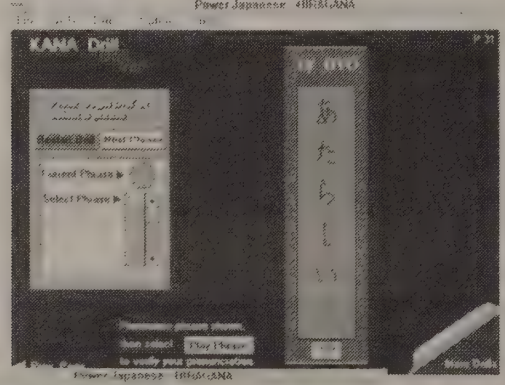
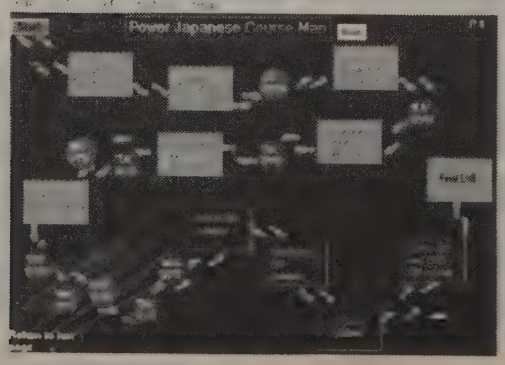
Power Japanese turns your PC running Windows 3.0 into a powerful multimedia educational tool. Plug the sound adapter into the printer port, attach the headphones, and you are ready to begin using this powerful Japanese language learning program. From the beginning, Power Japanese teaches you to read, write, and speak all 112 basic Japanese syllables, which are the building blocks of the Japanese language. With this foundation you will be able to learn the basic elements of Japanese grammar, master the essentials of Japanese language and culture, and progress quickly to words and phrases. ($189, including sound adapter, headphones, exercise book, pocket dictionary, and flash cards) BayWare, Inc., 201 San Antonio Cir., Suite 128, Mountain View, CA 94040. 1-800-53-TUTOR.







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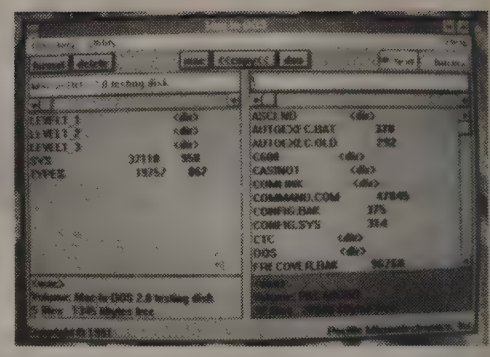
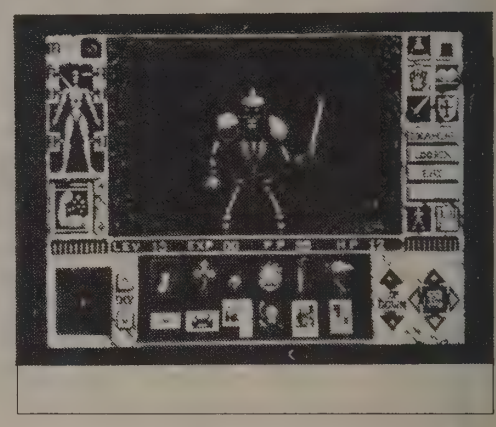
Mac-In-DOS gives DOS-based PCs the ability to transfer files to and from Macintosh computers via 1.44MB floppy disks. The newest version, Mac-In-DOS 2.0 for Windows, lets users take advantage of Windows capabilities, such as mouse support and icon control. After you launch this program, insert a Mac disk and select the files—text or graphics—to transfer. Mac-In-DOS will also add or remove the line feeds within a document. ($199) Pacific Micro, Inc., 201 San Antonio Cir., Suite C250, Mountain View, CA 94040. (415)948-6200.



GAMES REVIEW

By Mike Markowitz



ELVIRA II: THE JAWS OF CERBERUS

Designed By: Mike Woodroffe, Alan Bridgeman, and Simon Woodroffe
Published By: Accolade
For: MS-DOS (640K, EGA or VGA, 8MHz AT or faster CPU, mouse recommended), Amiga version available soon
List Price: $69.95

An evil force has taken over Elvira's movie studio and is holding her captive deep inside one of the spooky sets—is it the graveyard, the haunted house, or the catacombs?

Elvira (the alluring TV and movie character created by actress Cassandra Peterson) is light-hearted, but like the previous Accolade game of this series, Cerberus is a very serious horror adventure.

Your first challenge is to get into the studio. The guard at the security gate can't help you much, being very dead (you'll find him in the bloodstained closet). You need to collect various keys and punch in various access codes from the copy protection code wheel to get inside so that the creatures can kill you. Until you get used to the game's combat system, they will do this with numbing consistency, leaving a picture of your battered corpse on the screen, with an invitation to "Play again?"

Programmed in the UK by a group called Horror Soft, the very busy point-and-click user interface uses several windows and displays, including a graphic representation of the player's body that turns into a skeleton as you take hits in combat.

Magic spells are an important part of the game. To cast one of the thirty-seven spells you need to collect the required ingredients and expend power points. Before playing the game you need to be thoroughly familiar with everything in the 26-page manual, or you won't last very long. Elvira II is so complex and difficult that serious players will eventually need to order the $10 clue book. Accolade also offers a 900 telephone Hint number and an online customer support bulletin board.

My only serious objection to the game is that there is no apparent way to turn off the sound track, which can become irritating after a while.

Elvira II is a monster game in more ways than one: its 244 files take up over 5.8MB of hard disk space. (Accolade, Inc., 550 S. Winchester, San Jose, CA 95128. 408/985-1700)

Graphics and Animation: 8
User Interface: 7
Sound: 6
Customer Support: 9
Overall Value: 7

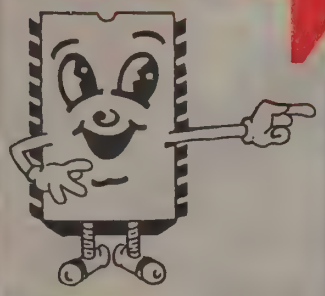
SPORTS ADVENTURE

Designed By: Bill Gross, Andrew Postman
Published By: Knowledge Adventure
For: MS-DOS (640 K, EGA or VGA, audio card and mouse recommended)
List Price: $79.95

Sports Adventure is a huge (6MB) multimedia database covering baseball, football, basketball, tennis, hockey, boxing, and the Olympic games. While more than a collection of sports trivia, the program does not attempt to provide the encyclopedic collection of statistics you can find in reference

Continued on page 77

Fry's Electronics Grand Opening



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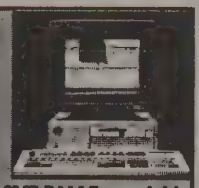

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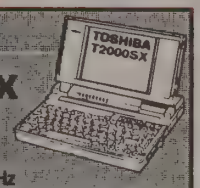

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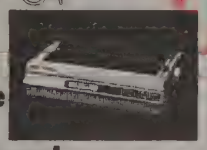

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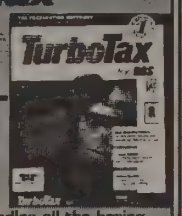

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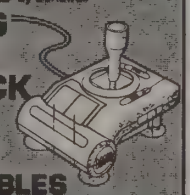

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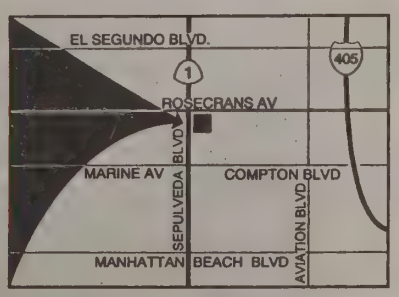

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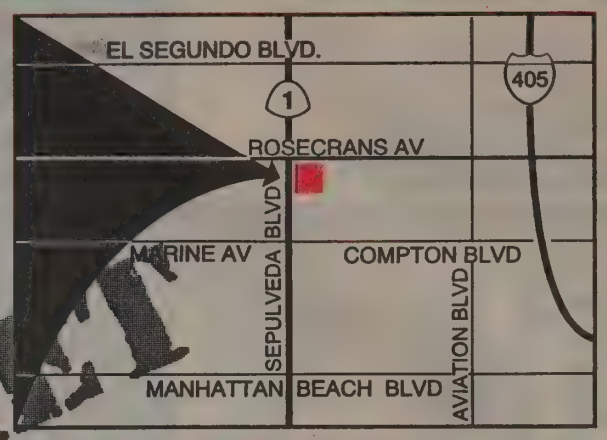

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Continued from page 72

books or the Sports section of any good almanac. Each "record" includes a scanned graphic image, a text file (several hundred words or more), a point on the time line, and a geographic location highlighted on a globe. Some records also include a digitized sound bite. Records are linked and cross-linked in interesting ways, and there is an excellent full-text index you can use to retrieve any occurrence of a specific word. The time line begins in 1869, with the invention of baseball. Geographically, the records are clustered pretty tightly around the Northeastern US and Western Europe.

The package includes four 1.2MB 5.25" and seven 720K 3.5" disks. An elegant installer provides simple explanations of how the program works while it is unpacking and assembling all the files on your hard disk (you must have at least 7.5MB of free space to allow room for all the unpacking).

Although based on the same "engine" as Knowledge Adventure, the two programs are completely independent and cannot be linked in any way. Still under development are high-resolution VGA and Super VGA versions of the program and printer drivers that will provide screen dumps of images that are not restricted by copyright. A CD-ROM version is also in the works.

Moving pictures are much more interesting to sports fans than still images, but usable motion video is still a little beyond the state of the art for disk-based software, as well as a major copyright hassle. Ultimately, the vast storage capacity and convenience of CD-ROM is much more appropriate for this sort of product, but until there is a sufficient installed base of CD-ROM drives, it is hard to develop a mass market for products of this nature. Meanwhile, Knowledge Adventure's proprietary image compression technology offers a tantalizing taste of multimedia while we are waiting for the market to develop. (4502 Dyer St., La Crescenta, CA 91214. 818/542-4200)

User Interface: 9
Graphics: 8
Sound: 6
Overall Value: 7

SUPER TETRIS

Designed By: Alexey Pajitnov, Vladimir Pokhilko, et al.
Published By: Spectrum HoloByte
For: MS-DOS (640K, Hercules, CGA, EGA, or VGA graphics, audio cards, joystick and mouse supported), Macintosh version coming soon
List Price: $49.95 (Super VGA Windows 3.0 upgrade available by mail for additional $24.95)

Designed and programmed in Russia, Tetris has been a monster hit in the West and Japan on a wide variety of computers and game machines. The original version appeared a few years ago—simple enough to be learned in a few minutes but challenging enough (we thought) for endless hours of entertainment. But the depths of the Russian soul provide a bottomless source of imaginative new torments for players, and the long Russian winter gives programmers plenty of time to perfect them.

Super Tetris follows the basic Tetris-Welltris-Faces-Wordtris concept of blocks falling into a pit. But now the pit is partially filled with underwater rubble. When you maneuver the falling blocks to form complete lines, you are rewarded with bombs that can be used to erase mistakes or blast away the rubble, revealing hidden treasures. The more lines you complete at one time, the bigger the block of bombs you receive. There are many different kinds of treasures: squares that

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award you extra pieces, squares that turn into a bubble that moves upward filling all empty spaces until it reaches the water line, squares that turn the next falling piece into a bomb, etc.

In effect, Super Tetris requires you to play two games at once—the standard Tetris challenge of completing lines and avoiding gaps, plus an additional requirement to empty the rubble-filled pit before you can advance to the next level. You have only a limited number of falling pieces available to complete each level. There are ten levels of difficulty. At each successive level the pit is deeper and the pieces fall more quickly.

The bouncy musical background, based on Russian folk tunes, was composed by Ed Bogas. The package includes one 720K 3.5" and two 360K 5.25" disks. After installation, the game's thirty-five files take up 84K on your hard drive.

Before you can play the game you have to type in the answer to a circus trivia question (from the 26-page manual). There are various two-player options—competitive, cooperative, or "head-to-head" (two copies of the game running on separate computers connected by null-modem cable or a network).

User Interface: 9
Graphics: 9
Sound: 9
Overall Value: 9

SPELUNX AND THE CAVES OF MR. SEUDO

Designed By: Rand and Robyn Miller
Published By: Brøderbund
For: Macintosh (1MB monochrome, 2MB color, 4MB for color under System 7)
List Price: $49.95

Robyn and Rand Miller are two brothers who constitute Cyan Software, which specializes in the creation of imaginative worlds based on HyperCard. (Rand concentrates on scripting and XCMDs, Robyn concentrates on artwork, animation, and rendering.) Their previous interactive adventures, The Manhole and Cosmic Osmo, pushed the limits of HyperCard 1.X. In Spelunx, they push the limits of what can be done with HyperCard 2.1, heavily supplemented with Macromind Director animations and 8-bit color.

The world of Spelunx is a simple honeycomb maze of rooms and tunnels that you can rearrange once you discover the secret of the Cave Builder. Designed for users aged five and up, the caves contain over twenty different games and

Continued on page 85

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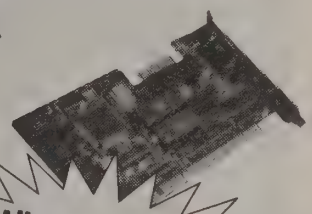

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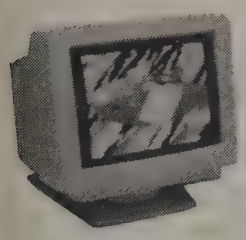

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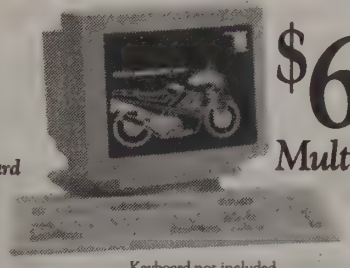

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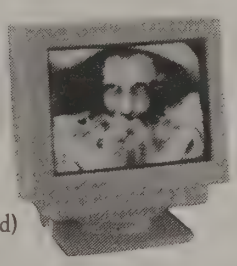

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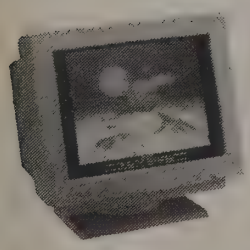

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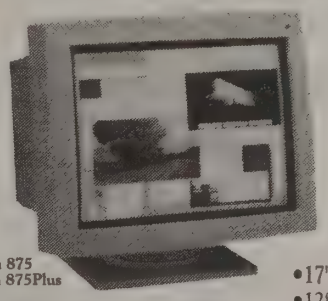

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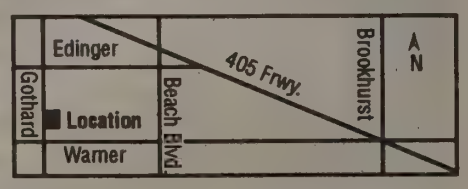

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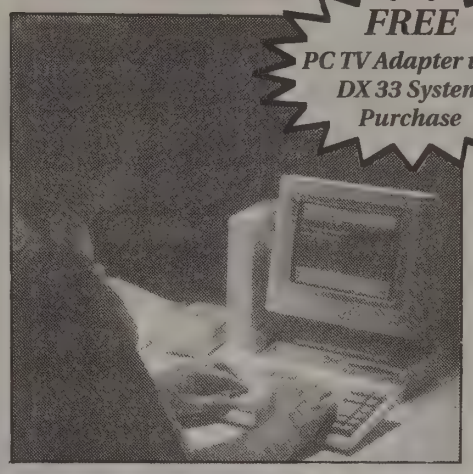

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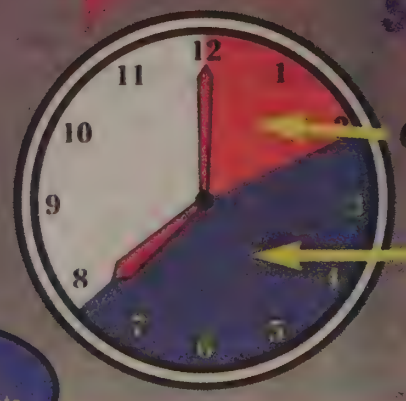

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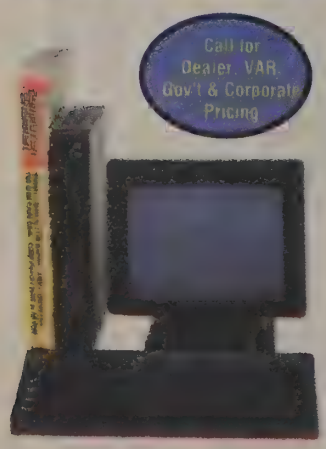

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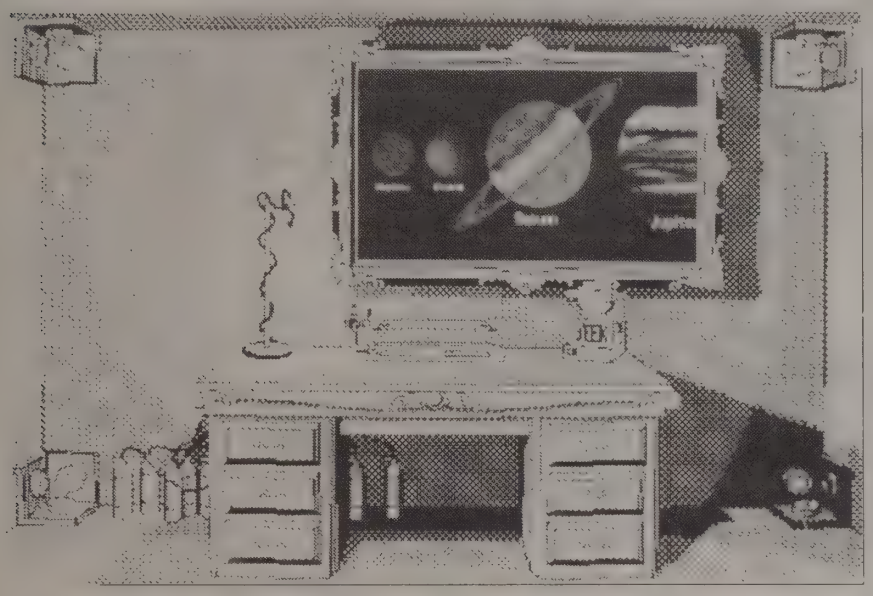
Continued from page 78

activities, ranging from the seriously instructional to the delightfully bizarre. The designers still remember "the things kids dream about: fantastic stories, peculiar animals, games, characters, wild plants, music, outer space, art, and on and on..." The only universal rule for interactive adventures is click on everything, and see what happens.

In Professor Spelunx's office, on the lower level of The Nemo Room,



you'll find a book that gives the history of the caves. You'll also find a blank diary you can write in, and a mug that apparently can't be replaced when you knock it off the desk and break it (the coffee maker will dump fresh-brewed coffee onto the floor). Upstairs is a telescope that can show you spinning color animations of some of the planets, based on actual NASA imagery. Behind a secret door lies Blacksmith Caverns, where you can pitch rocks into a variable-depth well, seeing how long it takes them to hit bottom, and how long it takes the echo to arrive.

In another room you'll find a terrarium with an animated lizard, whose activity depends on the temperature you set (and how you feed him). Nearby is the wonderful Yodel Toaster game, in which you move your toaster to bounce falling slices of bread (being careful not to burn them). One of the most sophisticated activities is the Stamp Animator, where you can create and save little movies using animated color icons. Then there's the Programmable Polka Machine, where you create a sequence of instructions for an animated dancing figure.

One of the more technically impressive activities is the Pinehead Puppets, animated talking heads that can take direct input from the built-in microphone of newer Macs.

Spelunx requires 5MB of free hard disk space and System 6.0.7 or later. The program is compressed (using DiskDoubler) onto four disks, plus one disk with the latest version of HyperCard. The design apparently includes hooks for plugging in additional rooms and activities, but there was no indication at the time of publication how, or when, these might be made available to users. Spelunx is a wonderful example of noncompetitive, entertaining, and educational Macintosh software that could never be created on any other computer. (Brøderbund, Inc., 500 Redwood Blvd., Novato, CA 94948-6121. 415/382-4400)

Graphics and Animation: 9
User Interface: 9
Sound: 8
Overall Value: 9

Continued on page 90

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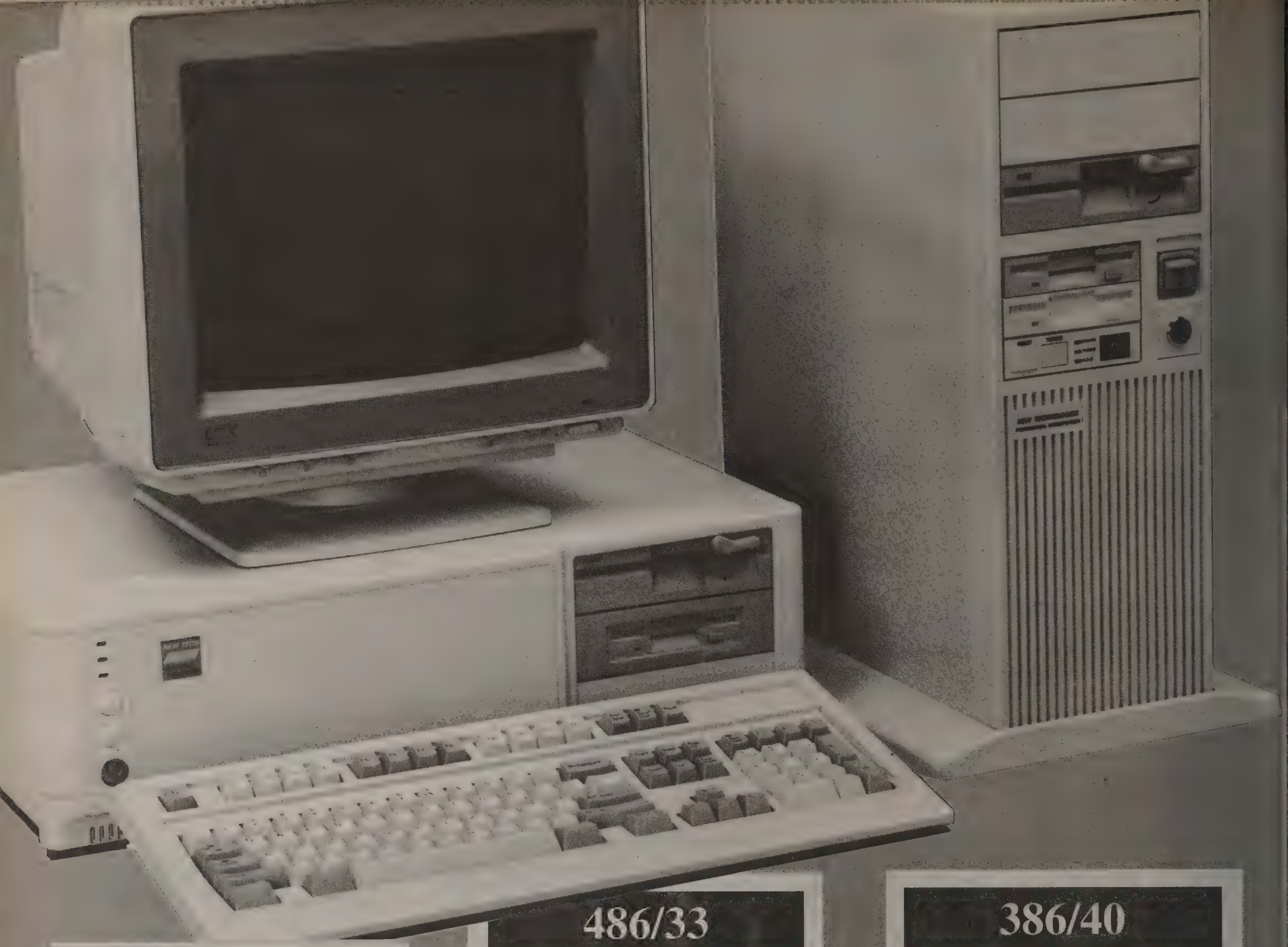

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- **Micronics 486 Motherboard**
- 4 MB RAM Expandable to 64 MB
- 64K Memory Cache
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- Teac 1.44 MB 3 1/2" Floppy Drive
- 130 MB (15ms) Hard Drive
- 16-bit VGA Card w/1 MB
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- 2 Serial, 1 Parallel, 1 Game Port
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- 230 Watt UL Power Supply
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- High Resolution Mouse

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486/33

- 4 MB RAM
- 64K Memory Cache
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- 130 MB (17ms) Hard Drive
- 16-bit VGA Card with 1 MB Video RAM
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- 2 Serial, 1 Parallel Ports
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- High Resolution Mouse

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486/50

- Same configuration as 486/33
- 256K Cache Memory
- 210 MB Hard Disk.

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386/40

- 4 MB RAM
- 64K Memory Cache
- Teac 1.2 MB 5 1/4" Floppy Drive
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- 130 MB (17ms) Hard Drive
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- 14" Super VGA Color Monitor (1024 x 768 res.)
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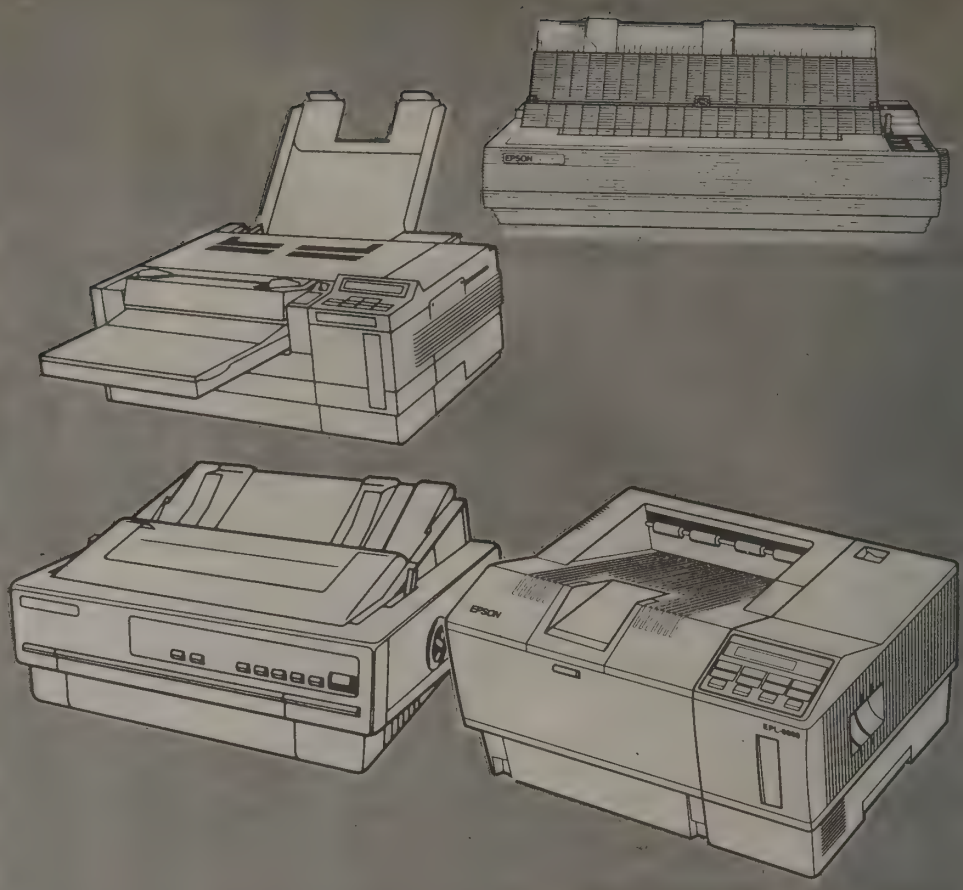

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- Epson's exclusive SmartPark™
- Exclusive LCD SelecType front control panel
- 133 characters per second print speed in Letter Quality mode (12 CPI)
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- Epson LQ ESC/P™ assures software compatibility
- Epson's one-year limited warranty

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- SelecType front control panel
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- Epson's one year limited warranty

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- 12 built-in fonts
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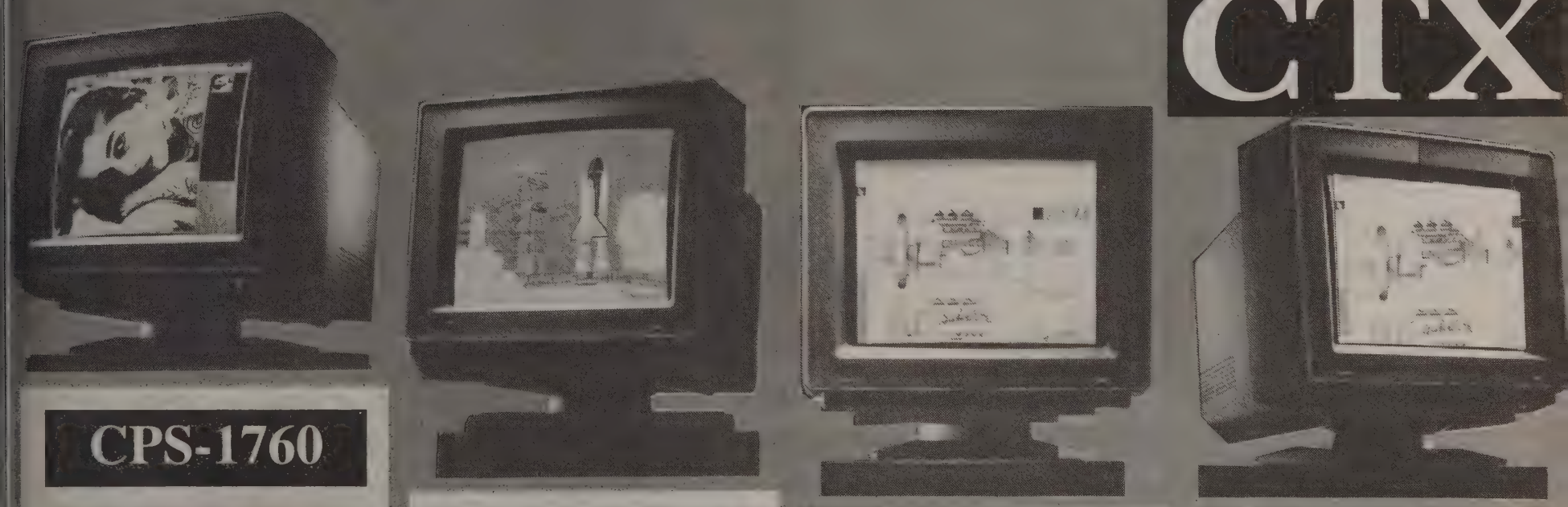

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- 640 x 480 resolution
- Infinite colors
- 30 MHz video bandwidth
- AC 90-260 V Auto-switching
- IBM VGA Macintosh LC Adapter Optional

5468A

- 14" diagonal screen
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- Vertical scanning frequency 50-90 Hz
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- Infinite colors
- 45 MHz video bandwidth
- AC 90-260 V Auto-switching
- IBM VGA, XGA, 8514/A VESA Super VGAs compatible

5468-NI

- 14" diagonal screen
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PRODUCT SPOTLIGHT

Continued from page 85

REVIEWS

MACINTOSH SOFTWARE

MR. FILE 1.1.1

Published By: Softways

List Price: $99, including free unlimited support

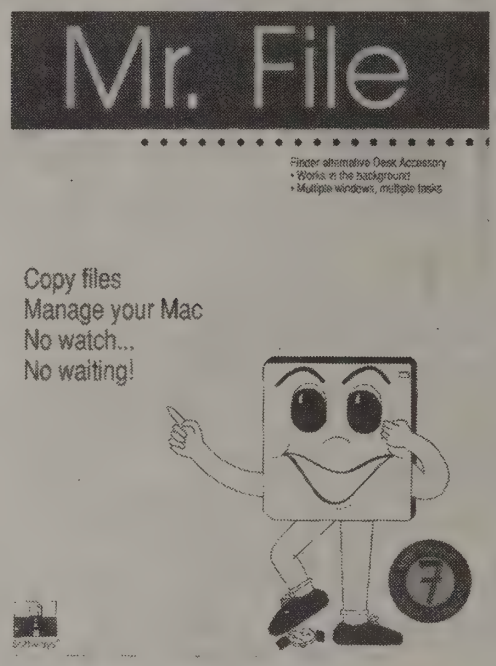
Reviewed By: Michael Robin

Alternatives to the Macintosh Desktop Finder are not new, but I have never felt an urgency to use one. Though I had a copy of Mr. File, it was just another DA (Desktop Accessory) on my Mac, until one day I thought "there must be a better way to copy a group of files to a disk." Copying to or from various folders to another disk entails an array of steps that quickly become tedious. That was when I decided to see what Mr. File really can do.

Mr. File is a Finder-alternative Desk Accessory that lets you view, organize, and work with your files and folders. It provides four types of windows to work in: Folder, Find, Selection list, and Quick windows. They all contain the same Launch, Copy, Rename, Move, and Erase buttons with a progress meter and signal to monitor jobs.

The traditional Finder does not tell you the size of a folder, only individual files. Mr. File will show this information with a click on the double question marks in the size category.

The Find, Selection lists, and Quick windows let you group together and work with files that are not in the same folder. This lets you easily launch a combination of documents that reside in different folders or even different disks. This is particularly helpful when opening text documents, such as files you recently downloaded from COMPUSERVE or other networks.



Mr. File quickly became a regular addition to my work. Although the Macintosh Finder is an excellent tool, there is always room for improvement and Mr. File offers just such an improvement. (Softways, Inc., 5066 El Roble, San Jose, CA 95118. 408/978-9167. CompuServe: 70632,436)

MAXIMA 2.0 & MODE32

Published By: Connectix

List Price: Maxima, $169, MODE32 is currently distributed free by Apple Computer

Reviewed By: Matthew Leeds

The release of System 7 brought several new features to the Macintosh environment. One of the more confusing is 32-bit addressing and its attendant benefits. Complicating matters is the fact that some Macs have "dirty" ROMs (not 32-bit clean) and cannot take advantage of 32-bit addressing.

Thirty-two-bit addressing allows direct access to an expanded pool of memory, both real and virtual. While 24-bit mode provides access to 8MB of physical RAM and 13MB of virtual memory, 32-bit mode provides access to 128MB of physical RAM and 1GB of virtual memory. To take advantage of it you must use only applications and INITs that are 32-bit clean, and you must be using a Mac with 32-bit clean ROMs (IIci, IIsi, IIfx,

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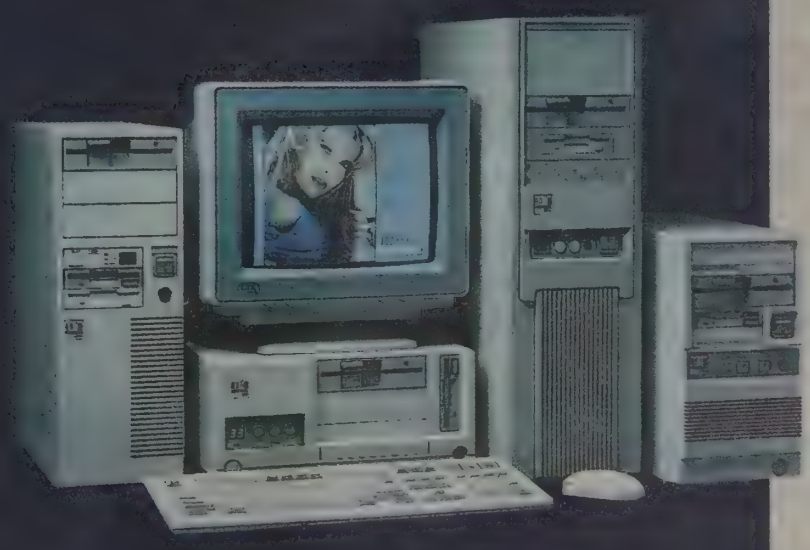

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- Hi-Resolution Mouse **Included**

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- 14" MultiScan 1024 SVGA Monitor
- 2 Serial, 1 Parallel & 1 Game Ports
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- Mini-tower or Desktop Case
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Unbeatable **$1,555**

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LC). The SE/30, II, IIx, and IIcx have ROMs that are not 32-bit clean. MODE32 creates a 32-bit addressing mode on those machines under System 7 and enables the 32-bit addressing portion of the standard System Memory Control Panel.

Since it only takes a single incompatible application for INIT to crash your system when in 32-bit mode, and developers will need time to update their applications (some shareware may never be updated), some users may decide to forgo running in 32-bit mode but still want access to more memory than 8MB. For these users, Connectix has upgraded their MAXIMA utility for System 7 compatibility.

MAXIMA is a RAM disk and memory extension INIT that can be used in either System 6 or System 7 environments. In either system, it extends the addressable RAM to as much as 14MB, and uses the remaining physical RAM to create a RAM disk. In addition, the new version can create a 32-bit compatible RAM disk in 32-bit mode, and provide it with full memory protection. MAXIMA's RAM disk is easy to use and can be configured to preserve itself through shutdowns by automatically maintaining a copy of its contents on a hard drive and reloading at startup. It can also be set up as the boot drive. Both of these utilities are simple to use, well documented, and Connectix's technical support is second to none; these are recommended products. (Connectix, Inc., 2655 Campus Dr., San Mateo, CA 94403. 415/571-5100. For more information on MODE32, Call: Apple Customer Assistance, 1-800-776-2333)

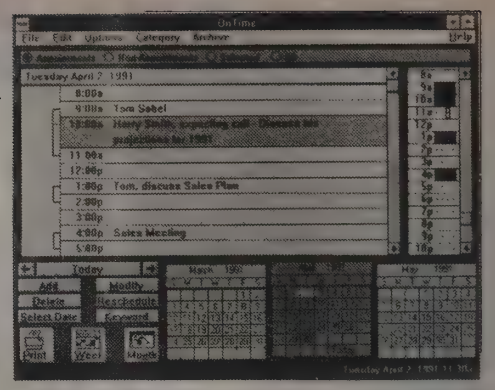
PC SOFTWARE

ON TIME FOR WINDOWS

Published by: Campbell Services
List Price: $129.95
Reviewed by: Woody Liswood

I am a student of calendar and time management programs. In my search for the perfect one, I found On Time for Windows, which has the best printouts of any time management or PIM that I have used.

On Time for Windows works much the



same way as On Time for DOS. Working with a database-type display, On Time allows you to label the event, set a category, and enter the frequency, as well as include the date, time, and duration, and even set an alarm so that your computer can remind you to do things.

When you view On Time you see a day planner, showing time, months, and a gantt chart blocked for events already scheduled. A set of buttons lets you switch between daily, weekly, and monthly views. Another series of buttons lets you add, modify, delete, or reschedule your events.

For me, the best part of On Time for Windows is the printouts. I have multitudes of appointments and travel more than most. On a weekly basis, I print my calendar and distribute it to others in the organization so they can keep up with my ever-changing schedule.

Continued on page 96

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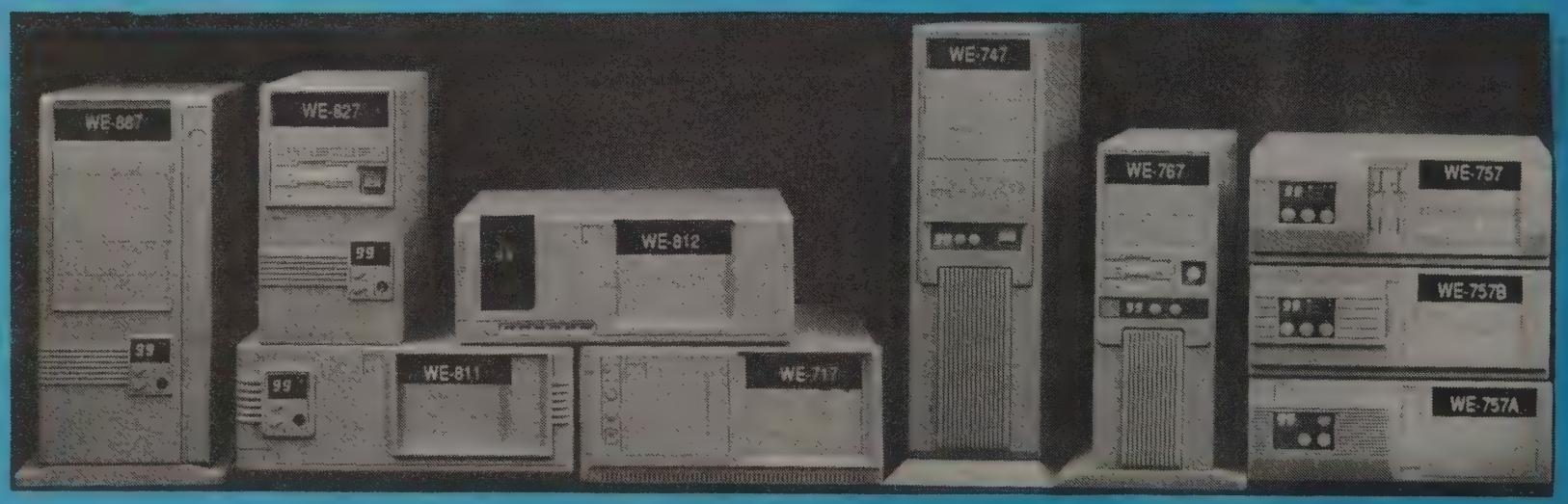

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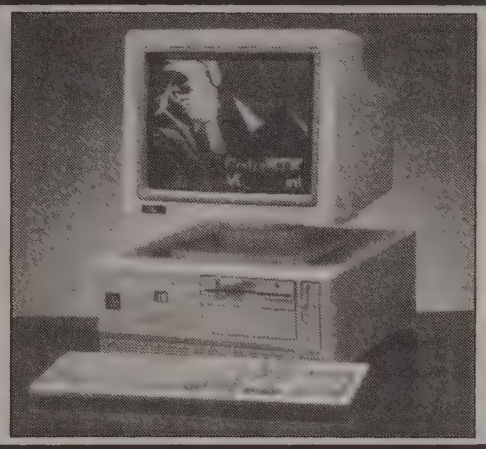

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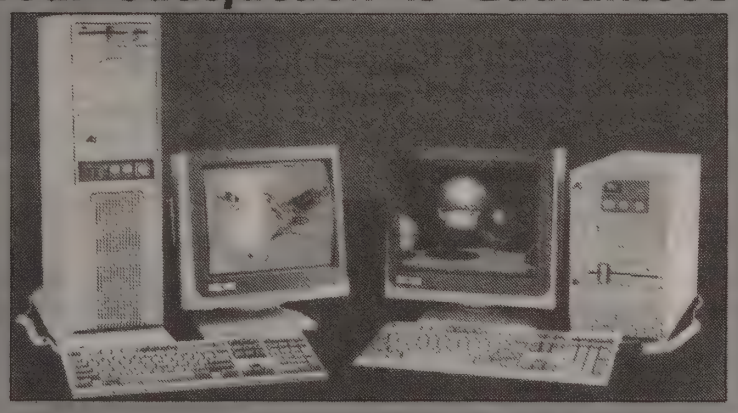

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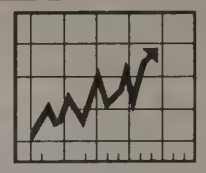

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101-key enhanced keyboard.
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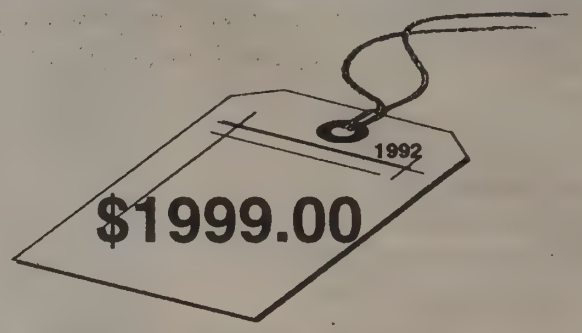
Super VGA **Non-interlaced**14" 1024 X 768 .28 monitor.



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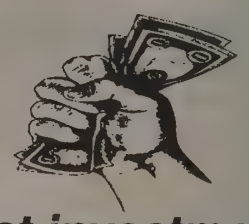

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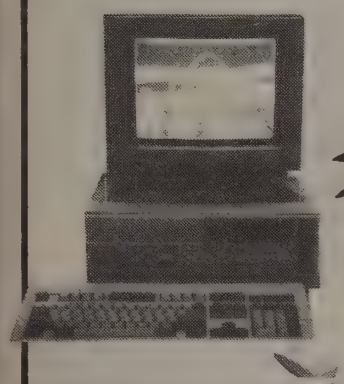

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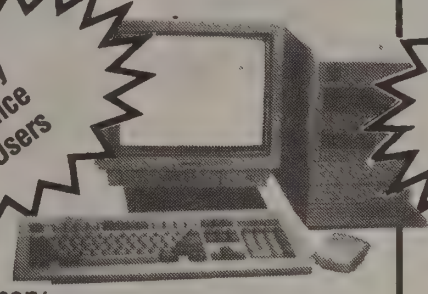

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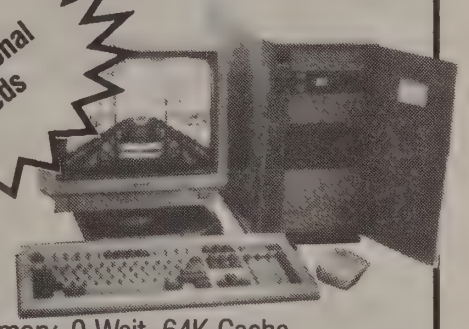

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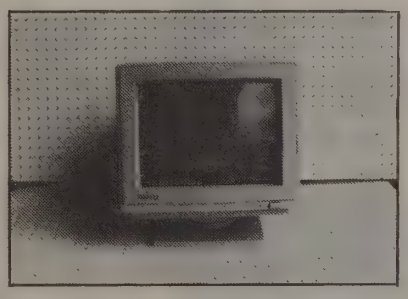

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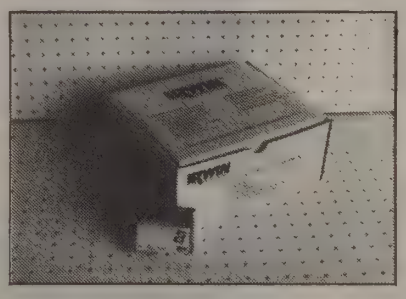

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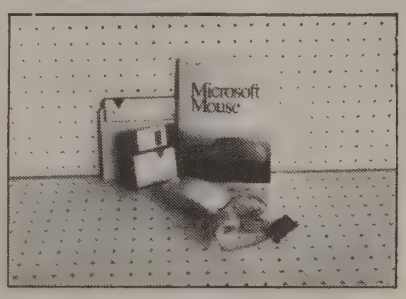

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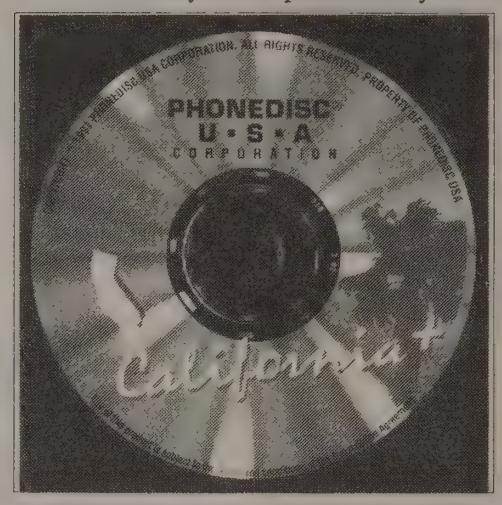
PRODUCT SPOTLIGHT

Continued from page 92

There are a variety of choices for printing the type of report that best suits your working style. You can print a daytimer, a weekly grid, a monthly grid, a trifold print, and a duplex print among others. I particularly like the trifold report. It gives me my calendar and appointments designed to be folded lengthwise, in thirds.

On Time for Windows is good stuff. If you liked On Time for DOS, this version should keep you happy. If you like good looking and easy-to-use printouts of your schedules, On Time for Windows is a must. (Campbell Services Inc., 21700 Northwestern Hwy., Suite 1070, Southfield, MI 48075. 313/559-5955)



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Reviewed By: Matthew Leeds

PhoneDisc Corp. provides a variety of CD-ROM discs with telephone listing and a search engine. There is not much to say about the information contained on the disc; read one phone book and they all look

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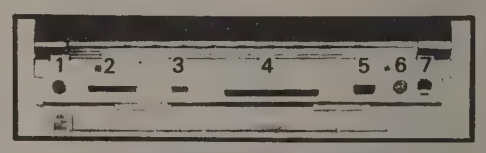

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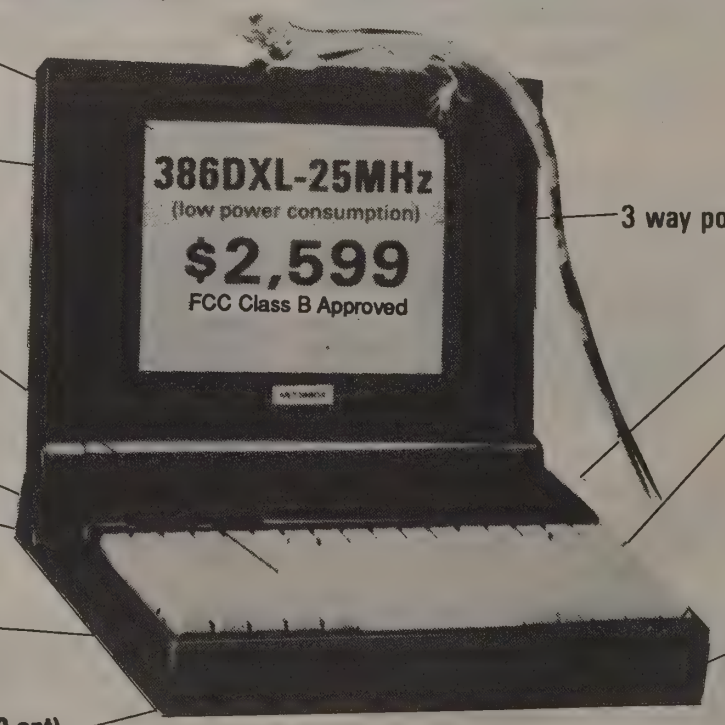

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alike afterwards. What makes this product work is the search engine and cross indexes provided.

QuickRef+ contains the nation's most frequently called telephone numbers. These include key government contacts, manufacturers, associations, schools, libraries, travel industry, media, professionals, business, and toll-free numbers accessible from the United States. Listings can be searched via name, address, telephone number, key words, SIC codes (Standard Industrial Classification), or several other classification indices.

PhoneDisc California+ includes almost fourteen million white page listings covering the entire state of California. Searches may include name, address, telephone number, area code, or zip code. A recent Supreme Court ruling that printed white page telephone directories do not qualify for copyright protection will allow the inclusion of information derived directly from all of the telephone directories published. The disc I reviewed had some gaps in the listing, evidenced by missing phone numbers when viewing the database by street address.

PhoneDisc Corporation also offers titles that include the entire United States, just New York and New England, Canada, and Germany. All titles use the same search engine. I found it to be reasonably easy to use (for a DOS product), and on larger-sized searches the response time was acceptable. Searching for every Smith in the phone book let me take a long lunch break. (PhoneDisc USA Corp., 8 Doaks Ln., Little Harbor, Marblehead, MA 01945. 617/639-2900)

LANGUAGE ASSISTANT SERIES

Published By: MicroTak Software

List Price: $79.95

Reviewed By: John Cowan

The inexpensive language translator has arrived. If you need to translate from English to Spanish, French, German, or Italian, try one of the Language Assistant series from MicroTak.

A simple translation editor allows you to enter paragraphs or pages of text for translation sentence by sentence. The results are good, but they aren't perfect—asking a fast, compact PC program to render the verb "to be" correctly in Spanish is a bit much. Instead, when a Language Assistant is uncertain how to handle a word or the construction, it stops, suggests several alternatives, giving you the choice. If you don't like the result, you can tell it to try again another way.

When the translation is complete, the Assistants can send the results to a printer or a file. They can also create a document giving the English and other language renditions of each sentence, side by side, making it easier to edit the document as a whole.

The Language Assistants do not, as yet, translate sentences to English, a capability which is being developed. Instead, they offer a menu mode which allows you to type individual foreign words, view their entries straight from the dictionary, and drop the English equivalent into a document. Or you can use this feature to construct keyword lists for documents you are reading rather than translating. The menu mode is memory resident for use in the background with your own word processor.

The Language Assistant dictionaries contain approximately 30K of words, plenty for general work. The programs also provide a fairly complete grammar, as well as conjugations of all the verbs in their dictionaries. A single keystroke steps through the tenses.

The Language Assistants are fast enough for use on a PC, barely, but are much more convenient to work with at AT speed. (MicroTak Software, 4655 Cass St., Suite 214, San Diego, CA 92109. 619/272-5700)■

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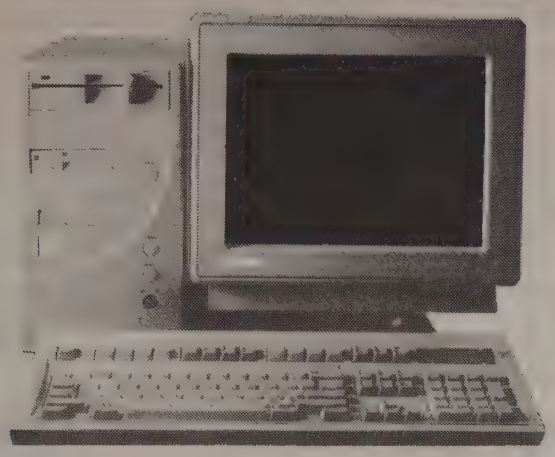

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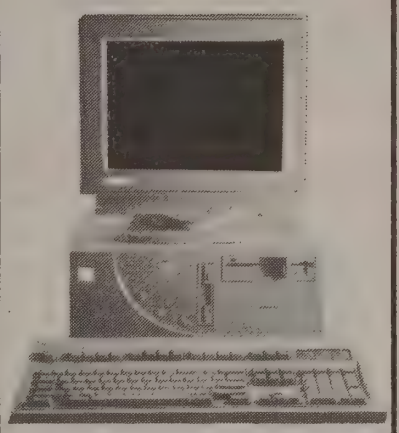

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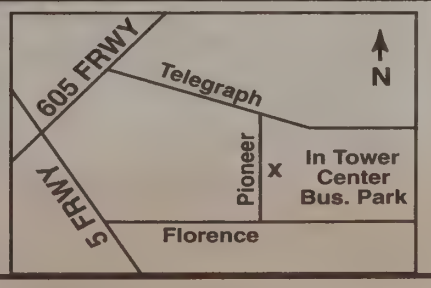

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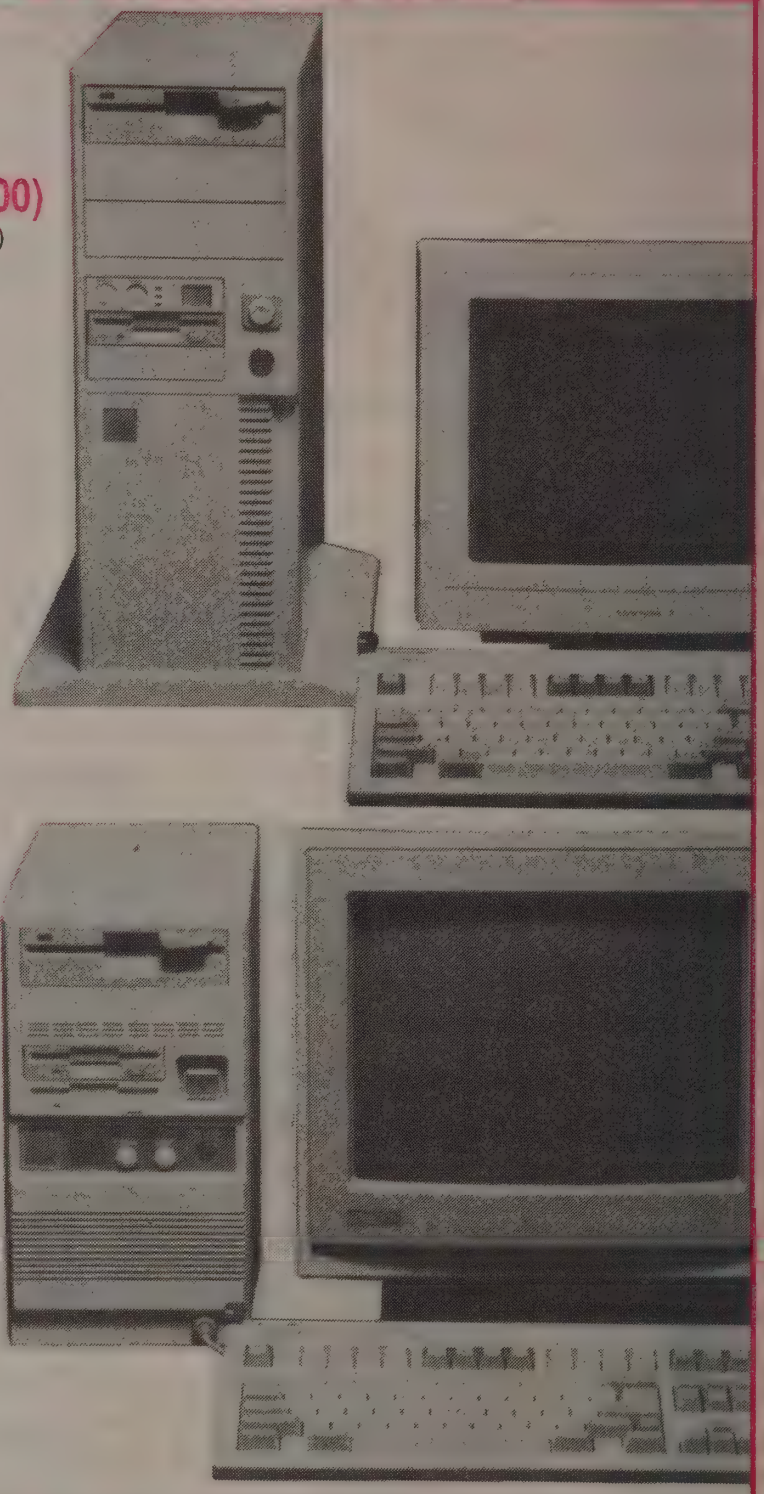

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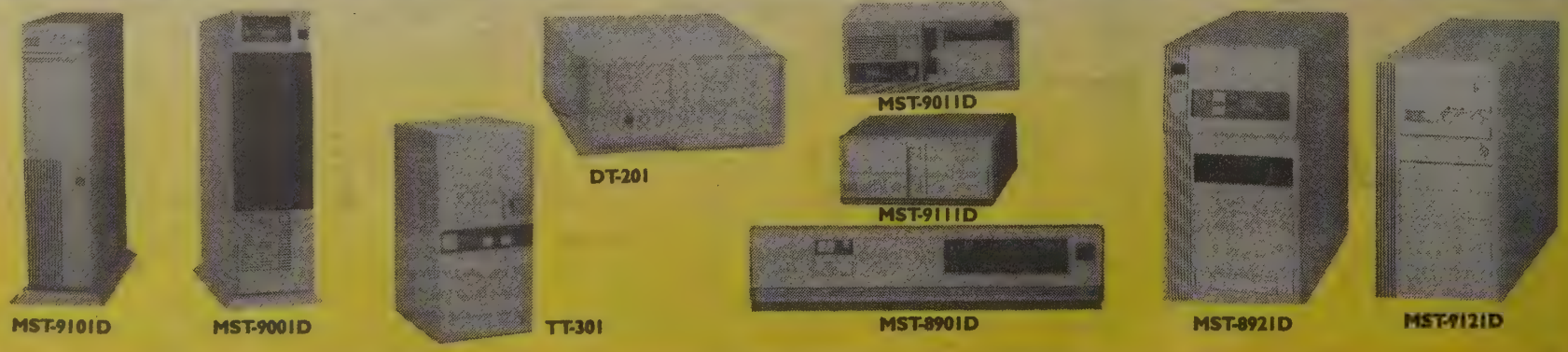

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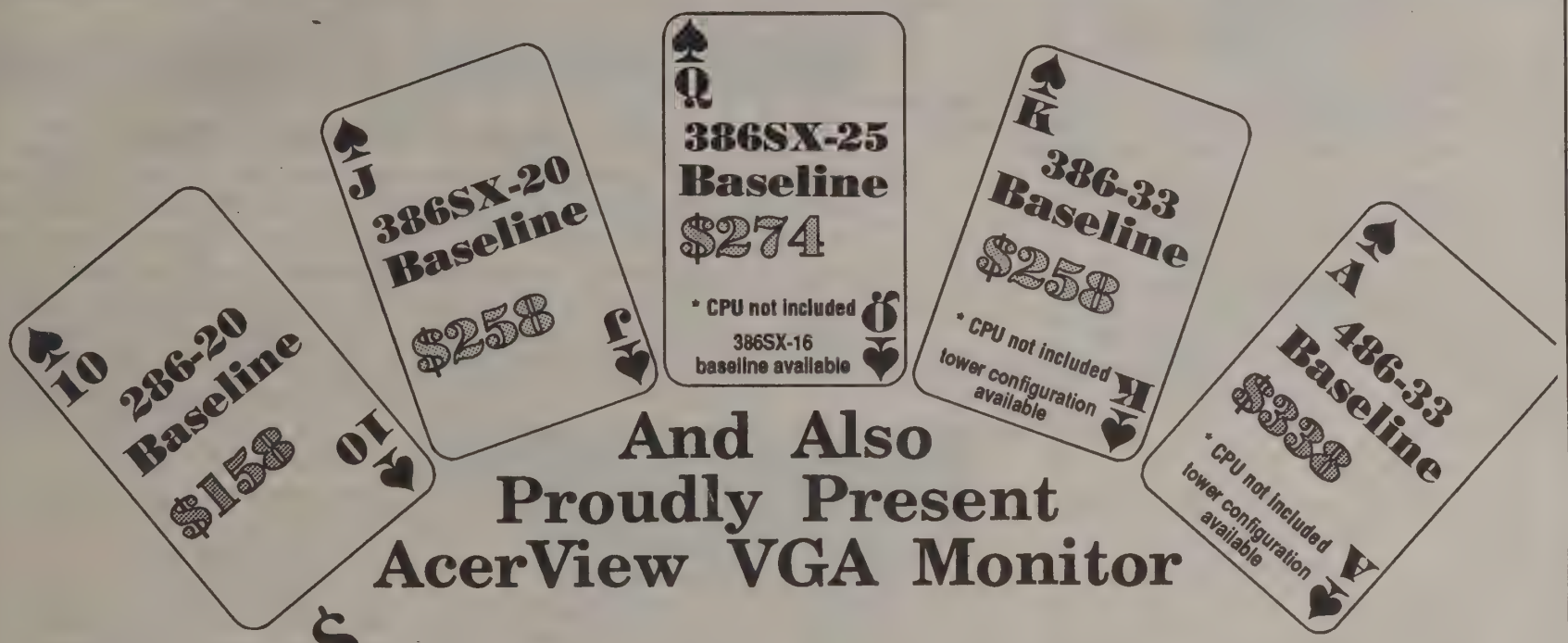

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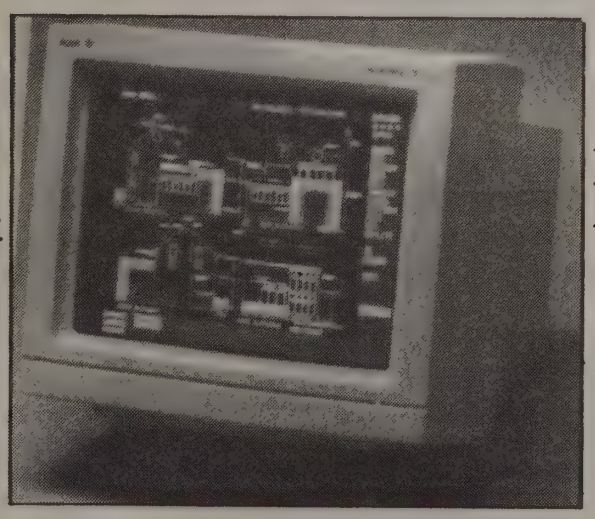

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Continued from page 28

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RESOURCES:
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The Cobb Group
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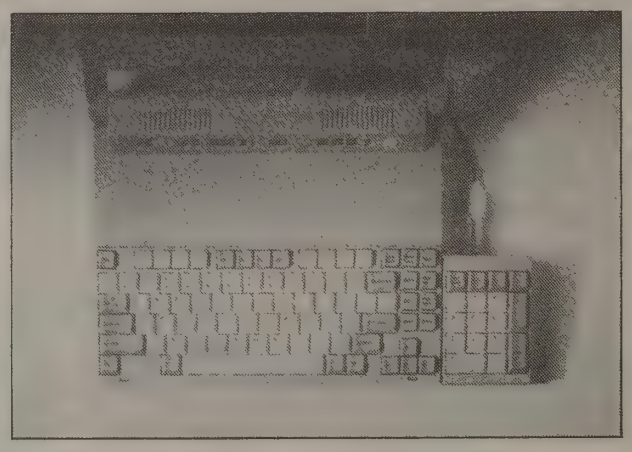
Computer of the Month: IBM PS/2 L40 SX

For years the portable market has eluded Big Blue. Mistake after mistake has preceded the introduction of an acceptable portable unit. But at last, IBM has come across with a solid entry. This 20MHz, 386SX laptop weighs 7.7lbs. and includes 2MB of RAM, expandable to 18MB. A 60MB hard drive and a 1.44MB 3.5" floppy drive are standard equipment.

The keyboard on the computer is excellent. And much to their credit, IBM has not used an embedded numeric keypad. Rather, they have opted to include a standalone numeric keypad that connects by cable to the portable unit. This is really a satisfactory solution to the old problem of getting a decent keyboard in a small unit. The numeric keypad folds up with a cover over the keys when it is not in use. When closed, it measures about 3.25" x 4.75", making this keypad small enough to easily carry along.



Although the publicity release says that the keyboard is virtually identical with that found on other PS/2 computers, I believe that the keys have a considerably shorter travel distance than that of its full-size brother. Nevertheless, it is easy to use and has an excellent feel. The keyboard and numeric keypad provide a full 101-key layout.

The LCD display is a 10" VGA screen that is easy to read, offering thirty-two shades of gray. The larger display helps reduce eye strain, especially when working for long stretches of time. Because of this larger screen, you experience the same aspect ratio as with most desktop systems. This means that a circle will look like a circle rather than the oval you see on some portables with smaller displays. If you need color or a full-size monitor, it's easy to connect a standard VGA monitor to the port on the back of the unit.

IBM includes an AC power supply that doubles as a charger for the NiCad battery. This battery will run the computer for up to three hours. Like many manufacturers, IBM includes an elaborate battery system to assure that you will not lose your data when changing batteries. Warning bells and whistles alert you before it is time to change and a suspend mode keeps your data safe. They recommend carrying an extra battery ($99) when you travel.

It is becoming increasingly common these days for portables to offer not only elaborate display aids to alert you to battery life, but also which drive is being accessed and a host of other conditions of the computer. IBM has included some icons on the front of the machine.

Although this is a PS/2 machine, the documentation is not extensive. I was disappointed, as I thought there would be a more elaborate discussion of OS/2. Their warranty, however, is excellent and extensive—it lasts twelve months and is good in over eighty countries.

In some ways, IBM now caters to a niche market. Their products are directed to a consumer who needs the IBM name and the pervasiveness of the company. This machine is excellent in every way, but it is interesting to see how price pressure has affected even the biggest of the big. Originally the PS/2 L20 SX sold for over $5000, but under the pressure of the clones, the price has been reduced to $3645. At this price, you are not paying a terrible premium for the three little letters.

This competitively priced machine offers expandability, and IBM promises more connectivity in the future. Currently you can get a fax modem ($459), extra serial port ($135), and a host of other options. The most impressive option, however, is the incredible amount of memory the system can take—up to 18MB. The memory modules are expensive, ranging from $1950 for the 8MB unit down to $489 for a 2MB module.

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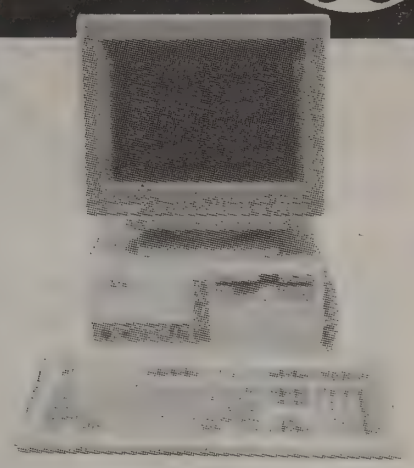

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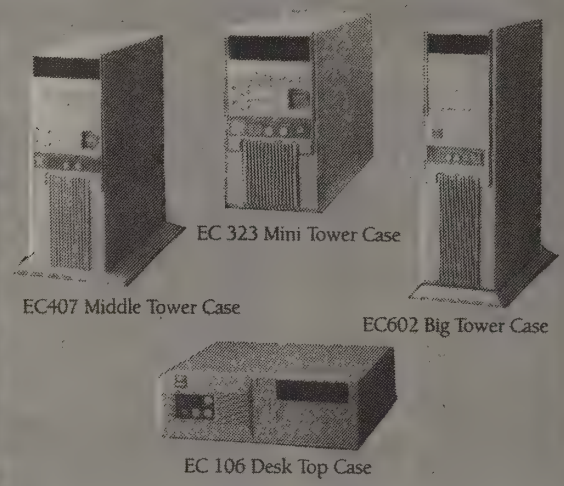

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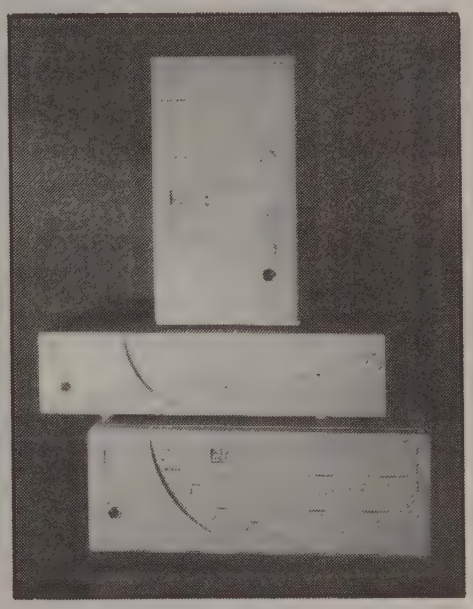

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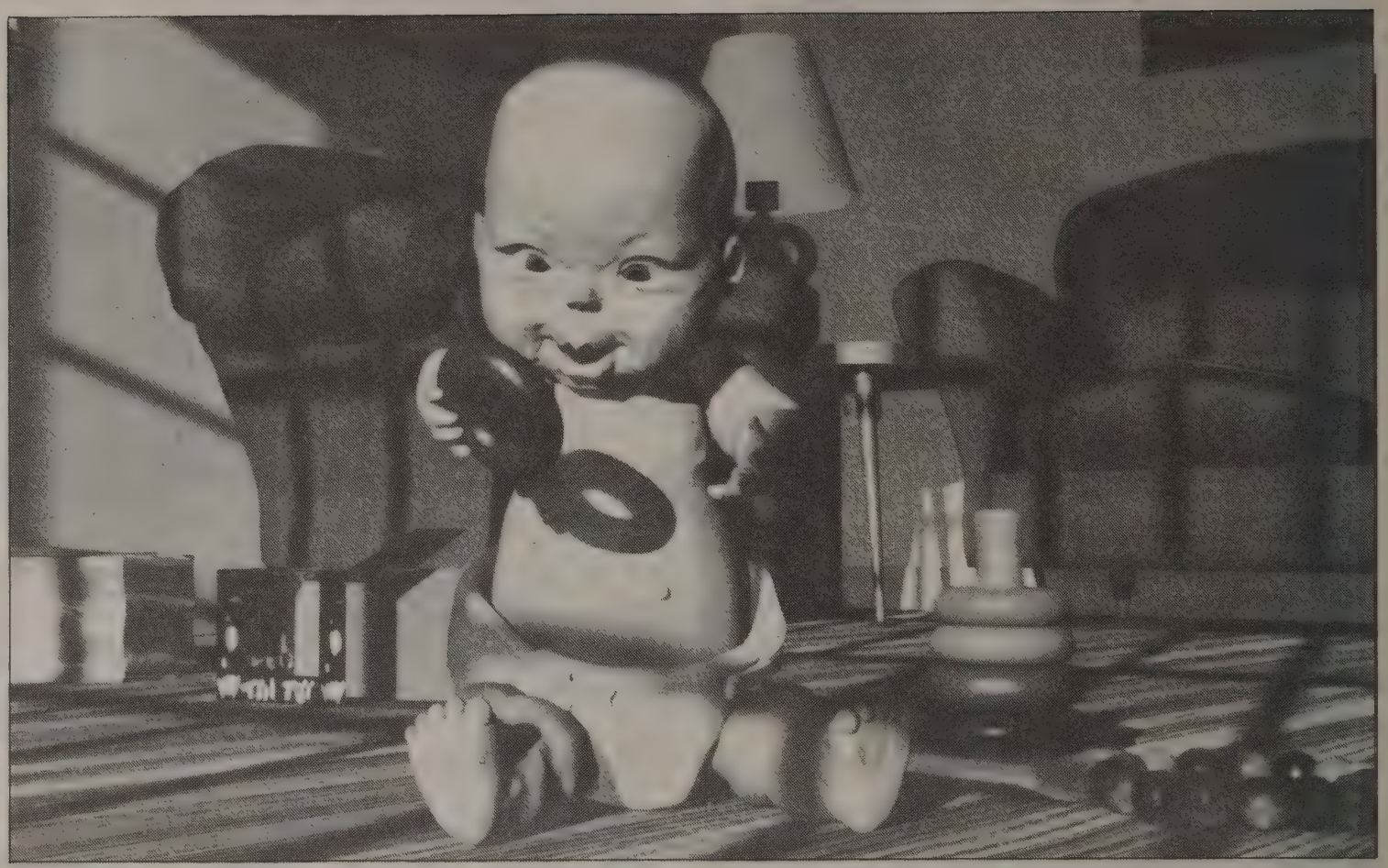

Though modeled on a composite of the children of many Pixar employees, the Baby From Hell in 1988's *Tin Toy* represented modeling and animation that were still recognizably computer-generated. More lifelike textures and movement are an ongoing quest at Pixar.

Computer-Based Animation And Special Effects

Pixar's State-Of-The-Art Tools Are Getting Better All The Time

BY RICHARD GREENFIELD

Terminator 2 offered a spectacular demonstration of how effectively computer graphics and animation can be used for special effects, from nuclear holocaust to a liquid metal cyborg. *T2* is, of course, a big-budget Hollywood production, but efforts are under way to provide relatively low-cost tools to allow independent movie and video producers with cash constraints to achieve comparable results.

Pixar, located in Point Richmond, is at the forefront of such efforts. Its Renderman software was used by George Lucas's Industrial Light and Magic to create the cyborg in *T2*, and, as PCs and workstations become more powerful, the Renderman is becoming available on numerous platforms, including Mac and NeXT (Photorealistic Renderman is incorporated into the NeXTstep 3.0 operating system, due in the spring.).

Pixar recently scored a major coup by contracting with Disney to produce the first full-length computer animation film, culminating a long-standing but largely unpublicized working relationship. The company's operations currently include both active production and software development.

Ed Catmull, president of Pixar, notes that the new computer-generated special effects, which work very well in areas like motion blur, are becoming widely accepted, and that the company is continually adding new capabilities which, says Catmull, "do not supplant but add to the bag of tricks."

THE STATE OF THE ART

Naturally, Pixar is very concerned with adding to the animator's bag of tricks. Renderman can be used across platforms, moving files generated on Macs and PCs to higher-end workstations by way of RIB

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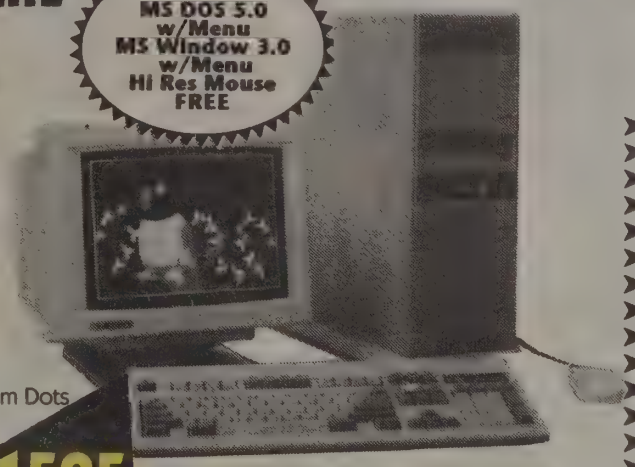

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files (Renderman Interface Bytestream). The company makes no secret of its ambition to make Renderman an industry standard for image modeling in much the same way that PostScript has become the standard for print and typefaces.

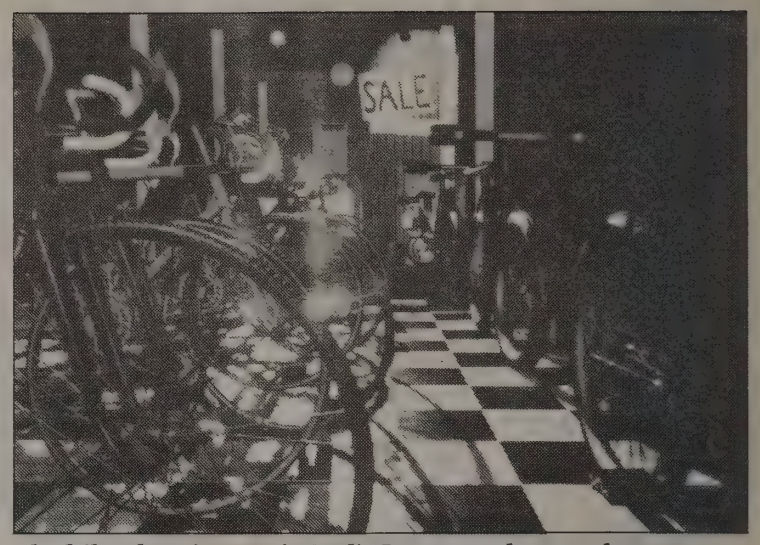
But, perhaps because it's also a production-driven company, Pixar is also sensitive to the needs of professionals working in the fields of animation and special effects. And its ability to address these needs has improved as the software took advantage of more powerful hardware platforms.

John Lassiter, who will be directing the Pixar/Disney film, recalls the making of the short film *Red's Dream* in 1987. The bike shop image in the film took eight or nine hours just to compute, and there was no ability to do simulated camera movement. Motion was simulated by having a neon sign outside flash on and off.

Now, Lassiter says, camera move capability is there. "In ten years, ILM will *still* have a model shop and a creature shop and a hand-to-hand shop, but they will also have a computer animation shop. And the tools will be better and faster, and will produce more natural-looking effects than what we have now."

Getting the natural look is the mandate of VALIS, a Pixar spinoff that shares its headquarters. VALIS markets shaders to give texture to the surfaces produced with Renderman—e.g. "Wood," which might be broken down into "Cedar" or "Pine," "Stained" or "Natural."

Says Bill Kolomyjec, senior partner at VALIS: "The trend will be away from sterile rendering and effects to more natural looks." And, just as VALIS specializes in object shading, another developer might choose to specialize in movement of two-legged animals or four-legged animals. (The day I visited Pixar and VALIS, a visitor from the MIT AI Lab was showing videos taken of their one-, two-, and four-legged robots; the robot videos were then animated together with videos of similarly bodied animals for comparison.)



The bike shop in 1987's *Red's Dream* took many hours to generate but set a standard for the time in realistic computer-generated images.

While it's much too early to assess *T2*'s long-term effect on the animation and special effects communities, it's apparent that it's a powerful force for encouraging the computer community to push the boundaries of achievable effects even further. It's also apparent that Pixar will be providing some of the best tools for producing these effects. (Pixar, 510/236-4000) ■

The liquid metal cyborg in *Terminator 2* was created by Industrial Light and Magic using Pixar's Renderman software.

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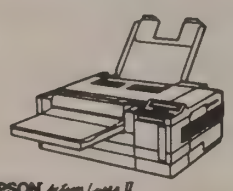

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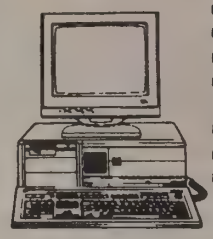

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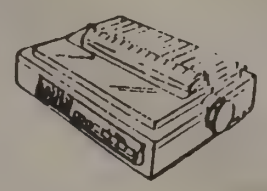

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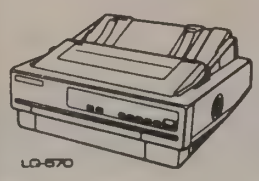

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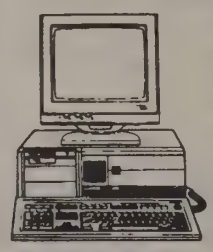

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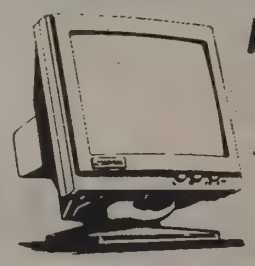

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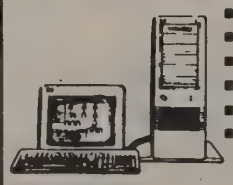

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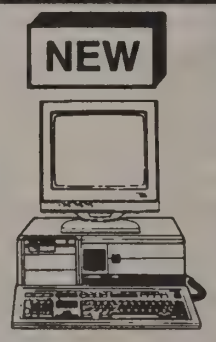

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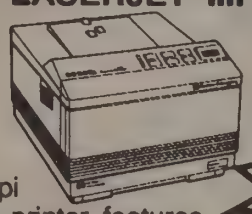

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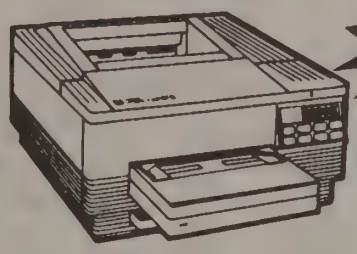

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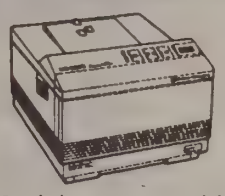

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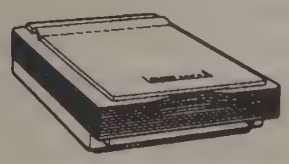

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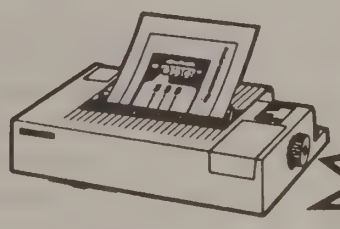

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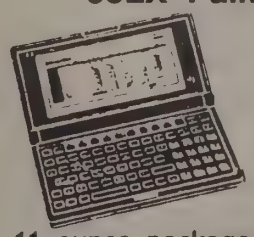

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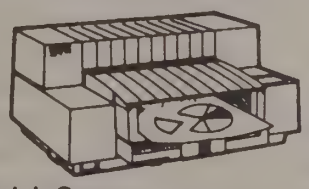

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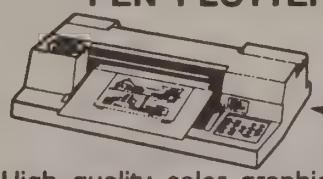

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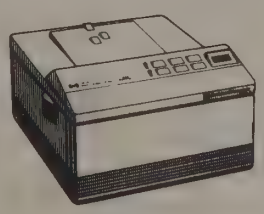

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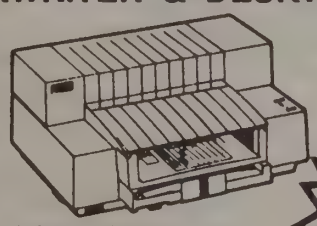

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Gold Disk Goes Multimedia

ShowMaker Lets Presenters Combine Amiga And Non-Amiga Elements

BY MATTHEW LEEDS

Gold Disk is well known in the Amiga community as a source of quality desktop publishing software. Pagesetter, Professional Page, Professional Draw, Gold Disk Type, and TransWrite have long been best-selling DTP packages for Amiga software retailers.

Gold Disk has also made some early ventures into the multimedia arena with ComicSetter, MovieSetter, and Video Fonts. Now, with the release of ShowMaker and MediaShow, Gold Disk has targeted the serious multimedia market.

SHOWMAKER

ShowMaker is a powerful system that lets you visualize and construct self-running presentations that contain Amiga-based and non-Amiga-based elements. It provides control over internal and external devices including laser disc players, MIDI keyboards and synthesizers, genlocks, and video tape players.

AMIGA

Unlike other systems, ShowMaker lets you prepare very long presentations because it plays one part of the presentation while automatically loading the next part. As a result, ShowMaker presentations are limited only by your available disk space, not RAM space. ShowMaker also comes with a special facility that gives you very accurate control of a presentation and its timing. This allows users to synchronize diverse media into a single polished product, such as defining an animation in terms of frames per musical beat instead of frames per second. ShowMaker will even let you sequence a series of Toaster effects directly into your production.

Copyright© 1992. All rights reserved. *Matthew Leeds has been involved in the high-tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

ShowMaker's interface is modeled on a timeline, similar to DeluxeVideo. Events are added or edited by dragging via the mouse. You can add as many separate tracks or events as you need; the timeline expands both vertically (to accommodate additional events) and horizontally (to either change the time scale or view a longer time period). Every different type of event (still graphics, anims, sound effects, etc.) has a unique track type. Clicking on a track brings up a file requester that allows you to select the specific element you wish to add and its associated parameters. For example, parameters for an animation might include frames per second, looping, transition type, and transition time.

The load times, memory, frame rates (if an animation), and audio channel requirements for the presentation are precalculated. ShowMaker evaluates your system, checking available memory, hard drive access time, and hard drive transfer speed. If there is insufficient memory to preload all the events, it will load the initial events, then load the rest during production playback. ShowMaker can conserve memory by dumping used events and loading new events while current events are playing.

External devices such as laser disc and video tape players are controlled via the serial port. If you wish to control more than one device, you'll need to add another serial port or use an external control interface that's accessible via the serial port and can control more than one device. Sony's VBox and Selectra's VuPort are two such devices used to control video tape decks.

SHOWMAKER AND THE TOASTER

The Video Toaster can also be controlled as an external device if you have a second Amiga with the Toaster installed in it. This is the preferred approach, as the Toaster virtually takes control of the Amiga during switching events—it takes over the Amiga's video display, making it impossible for ShowMaker to display animations or pictures; it also interferes with the audio hardware, making it impossible to play back music and sound effects properly. Most importantly, the Toaster interferes with ShowMaker's timing, making accurate, synchronized productions almost impossible.

If however, a second Amiga is not available, the Toaster can be controlled via AREXX. ShowMaker offers a Toaster event track that lets you set up a Toaster event and program the AREXX commands via the mouse from menus and lists. ShowMaker also works with MIDI TimeCode, SMPTE timecode, SuperGen genlocks, and DCTV.

MediaShow is ShowMaker's little sibling. Priced at $129.95, less than a third of ShowMaker's $395, it sacrifices the external device control, including any Toaster control and the AREXX interface. However, it adds a bundled paint and music program pair. The paint program has the usual paint tools: custom brushes, brush rotations and scaling, 16-level zoom, palette control including color ranges and swapping, and text capabilities. The music program supports SMUS file format, plays up to four instruments concurrently, and displays scores in sheet music notation. It provides dotted notes and ties, and whole notes to thirty-second notes. It offers control over tempo, key signature and time signature, and displays a piano-style keyboard on-screen.

OTHER NEWS

In other news, Stylus has released an update

ShowMaker is a powerful system that lets you visualize and construct self-running presentations that contain Amiga-based and non-Amiga-based elements.

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to ProVector, v2.1. This new version has many new features including a new spline drawing method for real-time curve drawing; real-time display of object outlines during editing, movement, scaling, cloning, and rotation; user configurable on-screen rulers; a new align tool; and a new move curve object edit function. The multiple undo function has been enhanced to support more operations; objects may now be sized or rotated from their centers, corners, or any user definable point of reference. The program now includes many additional AREXX commands and macros. Future enhancements will allow importing files created by other applications. The first file format to be supported will be EPS (Encapsulated PostScript).

Finally, for those of you interested in color hardcopy, check out the new Hewlett-Packard DeskJet 500C. This printer is selling for about $750 out the door, and it offers very acceptable color output. Commodore has been working on a Preferences printer driver for this printer, and beta copies have been floating around the nets for several months now.

You can do better, however, by buying a copy of the new Super_DJC driver from Creative Focus. They have been providing printer drivers for DeskJet printers for some time now, and have added support for the new color DeskJet. They are running a special discount offer on this new improved driver. They also offer an enhanced Preferences-like interface for their driver and great fonts. ■

RESOURCES:

Gold Disk
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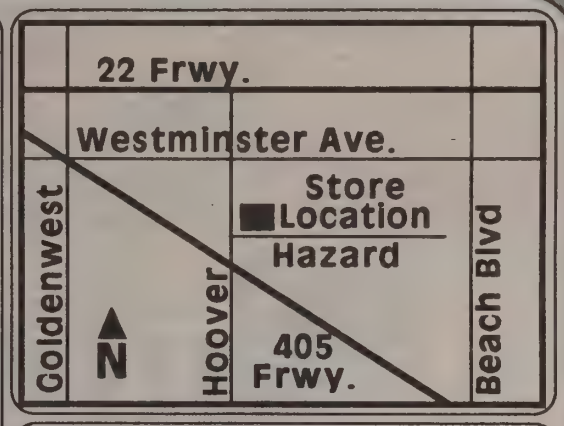

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Another Year, Another Expo

QuickTime, Brain Waves, And Marble Macs

BY DAVID MORGENSTERN

As I watched the Super Bowl last month, I remembered the wild advertisement that introduced the Macintosh to the world eight years ago. In the third quarter, a woman athlete ran from grim-faced thought police and tossed a hammer into a giant video screen filled with Big Brother's face, thereby saving the world from becoming a totalitarian state.

It's strange how Steve Jobs' predictions for the computer industry have been paralleled in the real world. Communism went into Chapter 11 bankruptcy, and totalitarian command-line operating systems surrendered to the democratic graphic user interfaces.

BMUG

True Macintosh believers smuggled their computers over the border, in through the corporate back doors. What was obvious productivity to us was heretical revolution to others. Only the shock of the IBM and Apple agreement has knocked some die-hard stubborn information managers out of the DOS ages. It's never too late to get some BMUG spirit!

MAC THE WORLD GO ROUND

Is it a particularly American characteristic to require the latest computer show to be the absolute end of the universe? Or is it a BMUG characteristic? Perhaps it's a universal primal need that causes people to want every Macworld Expo to be the earthshaking cosmic silicon satori. We can't always get what we want—but what we got ain't bad!

Everyone that crossed my path on the San Francisco Macworld Expo floor said, "It's nice, but everything is evolutionary." They saw the show as a stream of updates and pleasant, run-of-the-mill products. No product caught them by the throat, knocking their breath out with some glorious vision of the future. Maybe we're all a couple of rungs up the digital ladder, and not as easily impressed.

Let's face it, the first Macworld featured the Macintosh—Period. And that was enough for most people. The only other product introduction that moved even the most I've-seen-it-all BMUGers off their duffs was HyperCard. A new spreadsheet will not set the heart racing.

Frontier 1.0 by UserLand was on the lips of the BMUG power crowd. It's the first program that lets users write scripts that can call AppleEvents, the inter-application communication software built into System 7. The scripts can be simple repetitive tasks performed on files, giving Mac users the "Batch" capabilities that MS-DOS users have enjoyed for years. But they can also be involved processes, encompassing many applications on a network.

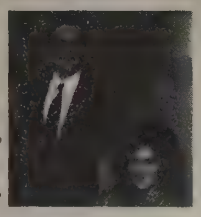
It's much more than the macro programs that record keystrokes, mouse movements, and clicks. People can combine software they already own to create custom integrated programs that toss data back and forth, without users having to be responsible for every cut and paste. I overheard some Apple engineers ragging it, claiming it's too complex and requires programmers to remember too many command verbs. But Frontier is out the door and on the shelves, while AppleScript is scheduled for release sometime this year—maybe.

QuickTime, the new multimedia system software, was found in almost every other booth. Not everyone has, or understands, the need for their spreadsheet to display movie files, but there were some educational uses of the technology that made sense even to the squarest user.

The Voyager Company was showing a few beta products that will be available in the next couple of months. *Poetry in Motion* featured QuickTime movie performances of a dozen poets, while the viewer reads along on the screen. A few poems had interview clips and biographical information. *You Can't Get There From Here: Ephemeral Films*

It's strange how Steve Jobs' predictions for the computer industry have been paralleled in the real world. Communism went into Chapter 11 bankruptcy, and totalitarian command-line operating systems surrendered to the

Copyright© 1992 by David Morgenstern. All rights reserved. *David Morgenstern believes that computers and BMUG can cultivate a positive change in the world. He volunteers time at BMUG, when he's not working his "regular job," writing, or prowling around the BMUG Bulletin Board. He can be reached through the BMUG office, AOL: daviD eM, CIS: 72030,1607, and Internet: davidm@sfsuvax1.sfsu.edu.*



Frank Khulusi, President of Creative Computers, with his wife, Mona.

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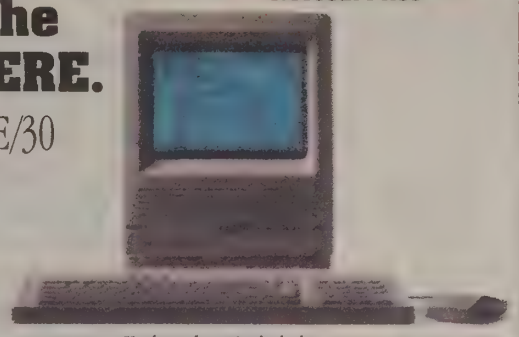
68882 math co-processor built-in!	optional third-party 68882	optional 68882 co-processor
built-in monitor	built-in monitor	optional monitor
Expandable to 128MB of RAM!	Expandable to 10MB of RAM	Expandable to 17MB of RAM
Quickdraw color support in ROM	No Quickdraw color support	Quickdraw color support in ROM
1 PDS 32-bit expansion slot	No expansion slots	1 PDS 32-bit expansion slot

Apple® Macintosh SE/30
2MB RAM / 40MB HD
4/80 systems also available

- Transportable
- Expandable
- System 7 capable



Keyboard not included

These are factory new with FULL WARRANTY, even though used Macintosh SE/30 computers are selling for much, much more!

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4MB RAM / 40MB HD

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- slender, modular design
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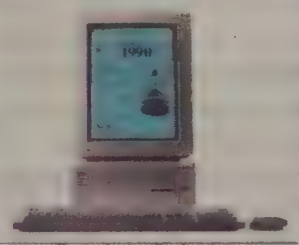
Apple Macintosh IIci with 5MB RAM



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- up to 70% faster than the Macintosh IIsi

keyboard and monitor not included

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keyboard and monitor not included

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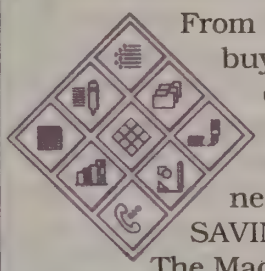

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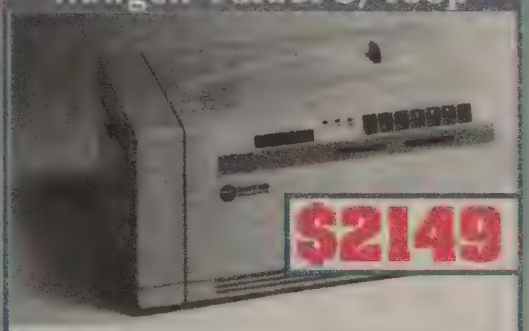
Newgen TurboPS/400p



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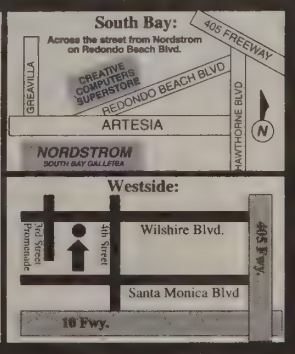


1946–1960 had articles on social film criticism accompanied by the short films themselves. CD-ROM publications will be the vehicle of choice for information about any performance-based art form.

EXPO TRENDS AND BENDS

The influence of the PowerBook laptops was seen in the overwhelming variety of portable productivity programs, address books, calendars, and to-do lists. People want to be able to carry their data and use it too. There were new entries in the flavors of project management software called Personal Information Managers (PIM). One of the strangest is Workspace by Ark Interface, Inc.

Workspace displays pictures of rooms, with a table, bookshelf, and filing cabinets with drawers. Some of the rooms are realistic, others are domestic versions of Picasso's Guernica. You put documents in binders, and move them around your virtual office. It's like a HyperCard home stack in hell. Workspace is still in development, and my views might have been influenced by its repeated crashes. A bomb looks incredibly impressive on a 30+" monitor.

The BMUG booth was its usual sardine-can mob. The BMUG tower had a new look this year, since the old cardboard shell sailed off the bridge on the way home last year. The TV-ROM was a tremendous success. There were a half dozen QuickTime CD-ROM collections at the show, but ours was the most fun—and the cheapest!

The third version of the Shareware Disk Catalog was also a big hit. Its 660 pages list all the programs and fonts in the BMUG shareware library, with detailed descriptions, font samples, and pictures. Everything from BMUG, the fantastic rainbow T-shirts, PD-ROM version A, and more, is available from the BMUG office!

Brian Thomas showed 1/22/63 Extra!, the latest addition to his series, HyperCard & History, at the BMUG booth. He's the author of If Monks Had Macs, and has formed a company, riverTEXT, to create interesting HyperCard-based software. Extra! is an examination of the assassination of JFK, including a QuickTime movie of the Zapruder film. As the movie runs, the cursor changes into a ruler so the viewer can measure angles and movement. The stacks are now only available from riverTEXT at PO Box 2517, Portland, OR 97208.

THE MARCH OF THETRILOBYTES

Here's a rundown of the non-Olympic moments on the Expo floor:

•My two favorite products in the show were the kind that most people would pass without a second glance. They were in plain booths, without the flashing lights or beautiful blondes that might draw people in.

The VersaGRIP system by Q-Safety is an impressive set of simple devices to hold your computer, or any other electronic equipment, down on the desktop during an earthquake. The braces are various flavors of molded nylon automobile-industry Velcro fasteners, and are designed to stand up to the constant vibration found in cars and trucks. Some geniuses poo-poohed my enthusiasm and didn't want to be bothered with a couple of $10 kits that would protect the thousands of dollars invested in their hardware and data. Go figure. Q-Safety can be reached at (818)449-1590.

Common Sense by Radiant Enterprises is an amazing sense and control node, useful in scientific data acquisition. One of the unique features about this device (other than the fact that its cost is way below anything else on the market) is that it's an AppleTalk device. You can put any kind of sensor, or combination of sensors, and control and collect data from the network.

The applications for the device are endless. Using PhoneNet connectors and remote software, you could control a house security system from a remote Macintosh. The package comes with a number of prebuilt HyperCard stacks for remote temperature data collection and home security management. The groundwork for this device and software was done for the acoustic reflector panel control system at Davies Symphony Hall.

•The Good Luck award at the Expo goes to the German company Archicomp. They were showing two custom made-to-order cases for computers. The Woody model for a modular Mac was made out of polished elm, with 24 karat gold plated trim. The Olympus case for a modular Mac was carved out of solid marble, including the mouse and keyboard. How much does a "thrilling contrast to the cold electronic core they conceal" cost? It's like the old joke—if you have to ask, they're not for you. I asked, and they cost $20,000 and $40,000 respectively.

I received plenty of blank looks from the craftsman when I asked if he'd tested the cases for heat buildup. Although there are vents and fans in the lavish cases, the difference in materials and thickness might create unforeseen heat sinks or traps. Herb Dang, one of our BMUG engineers, thought that the marble case would conduct heat perfectly, but only if one part of it was submerged in water! Perhaps this is a product for only the highly wealthy and well-insured Macintosh user.

•Video display terminal health and safety were on the minds of some vendors and users. The NoRad Corporation showed an unusual add-on shield against Extremely Low Frequency (ELF) magnetic radiation. The ELF ProTech is a set of panels that fit around the sides and back of the monitor, held in place by little Velcro strips. It effectively cuts the radiation leakage by 70%. Other effective retrofit shielding products need to be installed inside the monitor; while the ProTech looks strange, it's quick and easy for home do-it-yourself installation.

ElectroPlasma has a different solution to the radiation problem—if you think it's a problem. They showed a number of prototype very large-screen (1280 x 1728) plasma displays. Plasma monitors do not

What Is BMUG?

BMUG is an educational, nonprofit, consumer advocacy group organized to share information and provide critical direction to users and developers in the computer community worldwide.

Like any growing organization, it is many different things to its eleven thousand international members. BMUG supports many Special Interest Groups (SIGs), a Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, publications, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: We *'re in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6–9 pm (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus. BMUG West is a meeting held monthly at the Exploratorium, San Francisco's science museum.

The BMUG Office, 2055 Center Street (a half block from the BART Station) is open to the public 9 am–5 pm. Please come by and say hello, meet other members, and hang out.

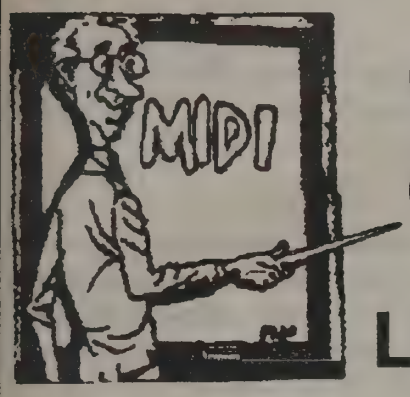
The BMUG HelpLine, (510)540-1742, and our fax number, (510)849-9026, provide technical assistance and telephonic hand-holding during business hours (11 am–5 pm). If your question can't be answered on the spot, we try to get you in touch with someone who can help. Of course, not every problem can have a happy ending—but we try.

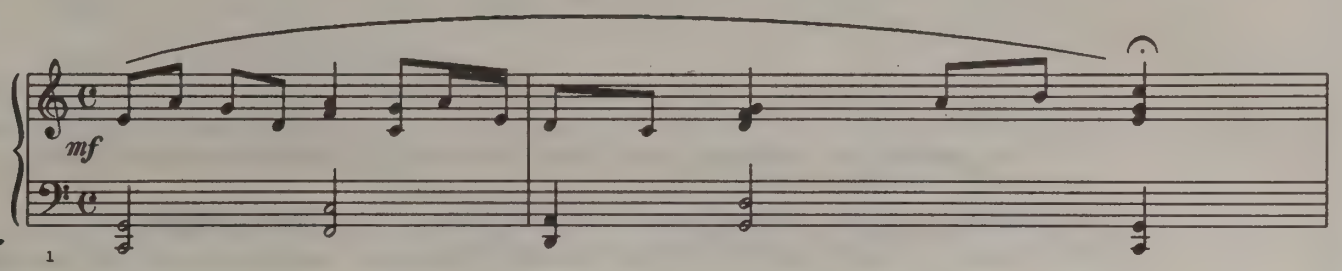
BMUG has one of the most up-to-date, comprehensive software libraries around with 700+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *TV-ROM*™, a fantastic collection of public domain QuickTime videos.

Our sixteen-line BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is a part of the international USENET network (ucbvax!garnet!bmug) or (user.name.bmug@garnet.berkeley.edu). With our sixteen-line capability you are now able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG, please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office, call (510)549-BMUG, or fax (510)849-9026.

Your Computer & MIDI Can Make Music





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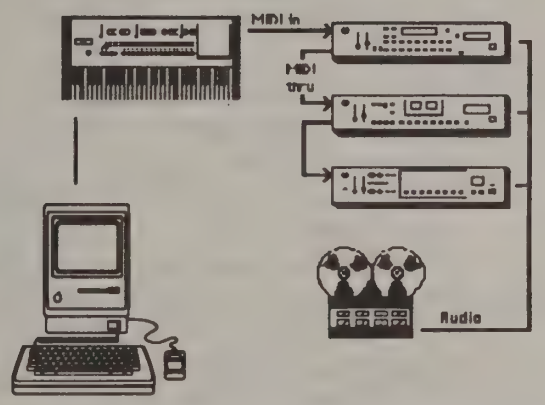

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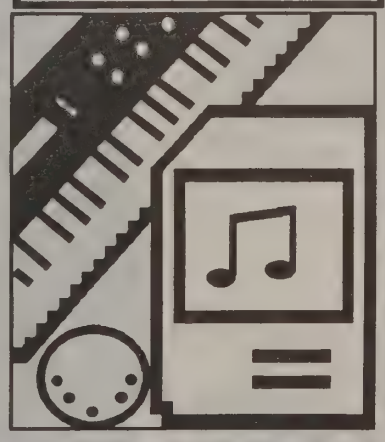
Finale Users Group March 25 RSVP!



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put out any radiation and do not flicker. They're expensive and used in the military.

•The strangest thing was only on the floor for one day (so I missed it—rats!). The Interactive Brainwave Analyzer from Psychic Labs Inc. is an expensive program. The BMUGers that saw it disagreed on the cost, some claiming $500, and others $5000. It comes with an electrode headset, analyzes brainwaves, and maps them in a 3-D isometric color graph. The colors represent various types of brain activity.

They showed this at the Verbum Be-In party. Todd Rundgren, the rock musician and Macintosh programmer, was persuaded to try one of these on. He is a practiced meditator, and won a contest for maximizing his blue line. He's definitely a cool dude and has the software to prove it.

•A constant commotion trailed behind the gorgeous body-sculpted young men prowling the show wearing MicroTech "I Got the Power" tanktop t-shirts with spandex shorts. They were plugging the Ultimate Power line of storage devices. I'm certain they are all power users, or rather, powerful users.

In his keynote address, Sculley said that there will be two different multimedia Mac LC models with CD-ROM built-in released this year. One will be a regular computer market machine, while the other will be a "consumer" market model. The new Apple consumer products may create some problems at Expo time.

The Consumer Electronics Show (CES) in Las Vegas runs concurrently with the Expo. A Macintosh delegation was seen cruising the Strip, meeting all the porno film stars in the Blue Video exhibit hall, and indulging in some real partying. All single, male Apple employees will want to join the consumer products team after the home videos of the tour are quicktimed around the office. How are you going to keep them down on the farm, after they've tasted Vegas?

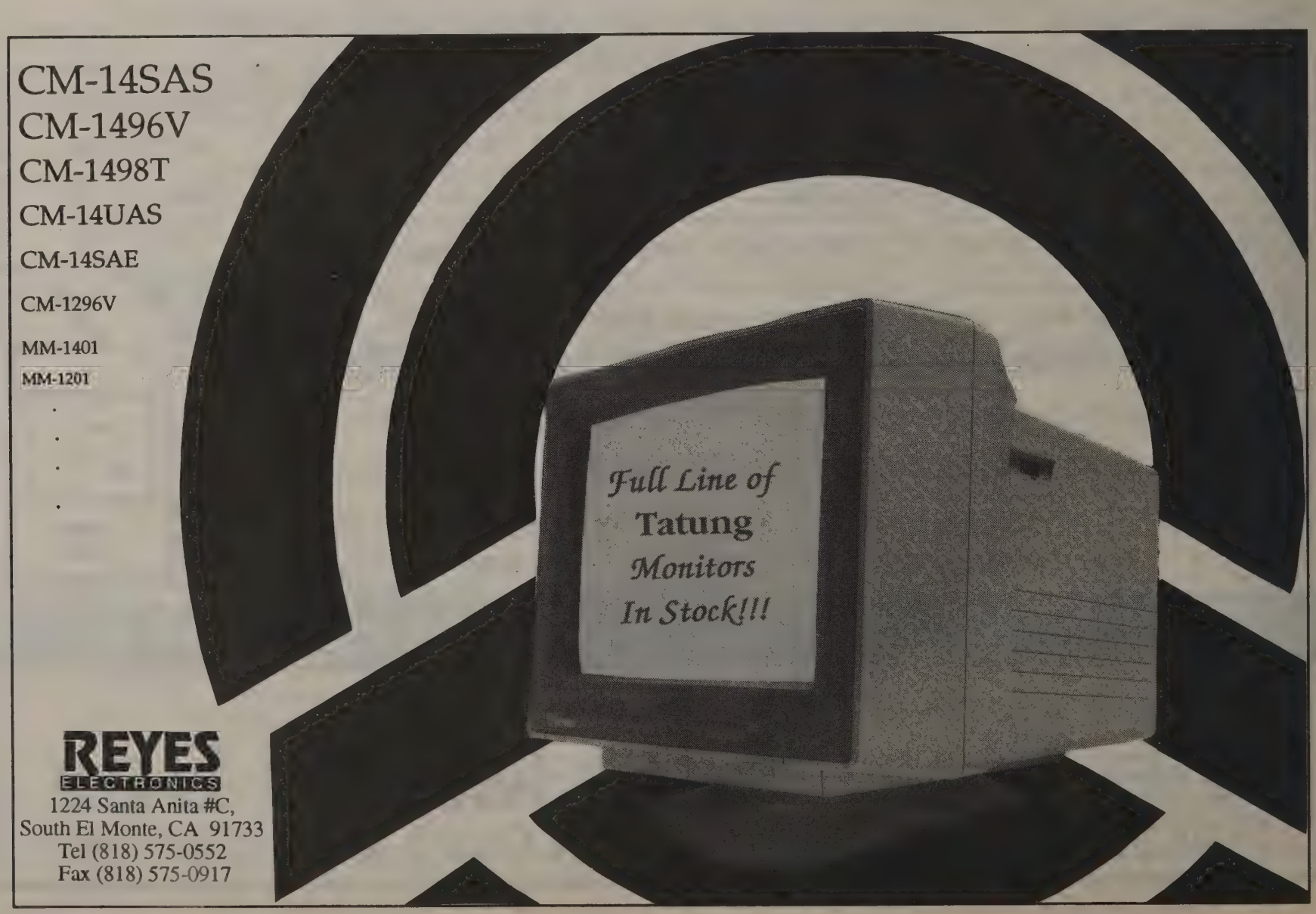
KEY BORED?

Some BMUG members have reported problems getting their PRAM (the parameter RAM stores settings used by many Control Panels) reset under System 7. The new way to perform this operation is to hold down the Command+Shift+P+R together when you boot your Macintosh. But some users are unable to get their keyboards to cooperate with this key combination.

A fully compatible Macintosh keyboard is supposed to have what's called "n-Key Rollover." This means that no matter how many keys are pressed down, it will register the proper KeyDown signal. In real world practice, this is almost impossible to accomplish, and even Apple's keyboards don't do it. They will begin missing key-presses around the eighth key.

Some third-party keyboards have even less rollover support. Some maintain only three simultaneous key-presses, or support them only with modifier keys (Command, Option, and Shift). Zapping the PRAM may be impossible on these third-party keyboards. You can use the Key Caps desk accessory to test your keyboard's rollover support. If it doesn't invert all four keys in its window, you're in trouble.

Test the duplicate keys on the keyboard, too. Almost all keyboards have two Shift and Option keys, and others have more. Sometimes the right side modifier keys on the keyboard will allow more rollover combinations than the left. ■



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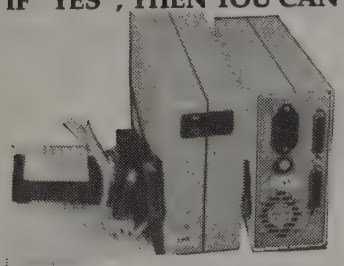

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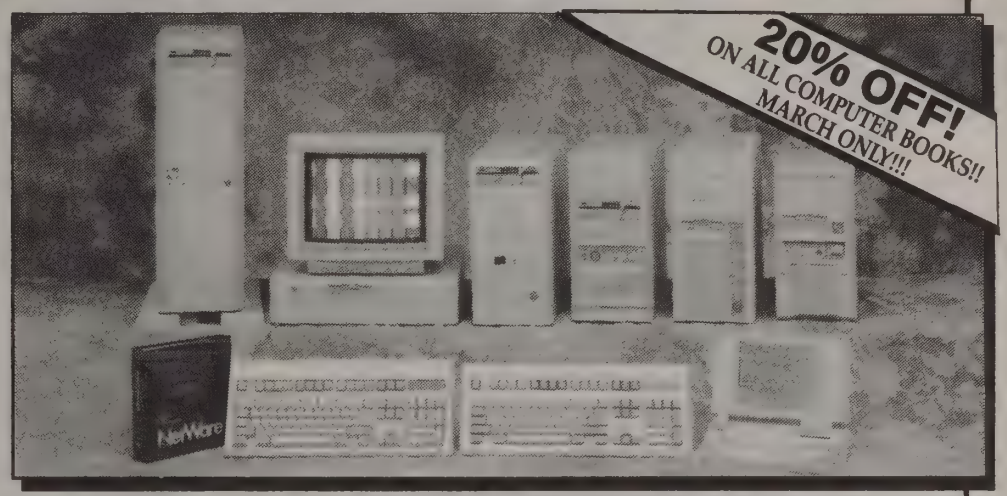

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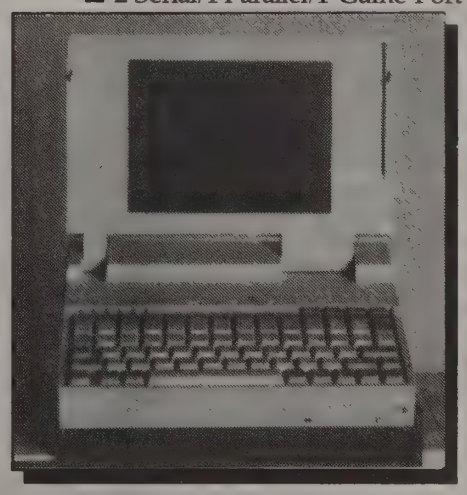

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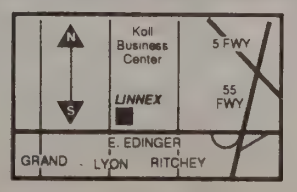

RESOURCES

Calendar Of Events

MARCH

March 7 Computer Show & Sale. Orange County Fairgrounds. Computer Swap. Call: 1-800-533-7220. BBS: (415)464-6408.

March 7–21 Intro To PageMaker 4.0 For The Macintosh Course. CSU, Northridge. Continuing Education. Call: (818)885-2644.

March 8 Computer Show & Sale. Antelope Valley Fairgrounds, Lancaster. MarketPro Shows. Call: (415)388-8893.

March 9–11 Novell 2.2 System Manager Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

March 9–12 CAD & Engineering Workstations '92 And Business Graphics '92 Conference & Exposition. Anaheim. NCGA. Call: 1-800-255-NCGA.

March 10–11 4th International Conference On Strategic Software Systems: Visions Of The Year 2000. Alabama. Univ. of Alabama, Huntsville. Call: 1-800-448-4031

March 11–13 Intro To Quark Xpress Class. Los Angeles. UCLA Extension. Call: (310)206-1422.

March 12–13 How To Master The Macintosh Computer Workshop. Ventura. MacAcademy. Call: 1-800-527-1914.

March 12–April 9 UNIX: Computer Wave Of The Future Course. CSU, Northridge. Continuing Education. Call: (818)885-2644.

March 13 Color Publishing Revolution Seminar. Anaheim. *Color Publishing* Magazine. Call: (508)392-2187.

March 14 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-252-7927.

March 14 Microsoft Windows 3.0 Course. CSU, Northridge. Continuing Education. Call: (818)885-2644.

MARCH 14

COMPUTER SHOW

Pomona

Computer Marketplace computer shows feature hundreds of exhibits with thousands of products. Admission is $6.00 and shows are from 10:00 am to 5:00 pm. Los Angeles County Fairgrounds (Fairplex), Pomona. Call: 1-800-252-7927.

March 14–April 11 Advanced WordPerfect 5.1 Course. CSU, Northridge. Continuing Education. Call: (818)885-2644.

March 15 Computer Show. Sherman Square Entertainment Center, Reseda. Computer Marketplace. Call: 1-800-252-7927.

March 16–17 How To Master The Macintosh Computer Workshop. San Diego. MacAcademy. Call: 1-800-527-1914.

March 16–20 SCO UNIX System V/386 Administration Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

March 17–20 Hands-on PC Configuration & Troubleshooting Course. Los Angeles. Learning Group International. Call: Kimberly Sisson, 1-800-421-8166.

March 18–20 The Second Conference On Computers, Freedom, And Privacy. Washington, DC. ACM. Call: (202)994-7238.

March 19 Communicating With Computers Seminar. Westminister. SOCCC. Call: (714)964-1247.

March 19–20 How To Master The Macintosh Computer Workshop. Los Angeles. MacAcademy. Call: 1-800-527-1914.

March 21 Computer Show. SDSU Aztec Center, San Diego. Computer Marketplace. Call: 1-800-252-7927.

March 21 Computer Show & Sale. Anaheim Stadium. Computer Swap. Call: 1-800-533-7220. BBS: (415)464-6408.

March 22 Computer Show & Sale. Antelope Valley Fairgrounds, Lancaster. MarketPro Shows. Call: (415)388-8893.

March 23–24 How To Master The Macintosh Computer Workshop. Anaheim. MacAcademy. Call: 1-800-527-1914.

March 23–24 Q&A: Database/Word Processing Software Workshop. Los Angeles. Symantec Training Group. Call: (415)898-1919.

March 24–27 Intro To Datacomm And Networks Course. Los Angeles. Learning Group International. Call: Kimberly Sisson, 1-800-421-8166.

March 25–27 Time Line: Project Manager Software Workshop. Los Angeles. Symantec Training Group. Call: (415)898-1919.

1991 AFTER DARK DISPLAY CONTEST

Deadline For Submissions: April 1, 1992

This year's After Dark Display Contest has been expanded to cover both Windows and Macintosh environments, as well as a new category for Computer Artists. Winning displays will be included in future releases of After Dark. First place winners in the Macintosh Programmer, Windows Programmer, and Computer Artist categories will receive a $2500 shopping spree from MacConnection or PC Connection. There will also be a $10,000 Cash Grand Prize for Best Entry Overall. For information and contest entry form, Contact: Berkeley Systems, Inc., 2095 Rose St., Berkeley, CA 94709. (510)540-5535.

March 26–27 Symposium On Experiences With Distributed And Multiprocessor Systems: SEDMS III. Newport Beach. USENIX. Call: (714)588-8649. Email: judy@usenix.org.

March 28 Computer Show & Sale. CSU, Northridge. Computer Swap. Call: 1-800-533-7220. BBS: (415)464-6408.

APRIL

April 1 Application Manager Seminar. Santa Monica. Intelligent Environments. Call: 1-800-669-2797.

April 1–3 Methods In Advanced User Interface Design Course. Los Angeles. UCLA Extension. Call: (310)825-1407.

April 4 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-252-7927.

April 5 Computer Show. Sequoia Conference Center, Buena Park. Computer Marketplace. Call: 1-800-252-7927.

April 5 Computer Show & Sale. Glendale Civic Auditorium. Computer Swap. Call: 1-800-533-7220. BBS: (415)464-6408.

April 6–7 LAN Manager Basics Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

April 6–9 SunWorld Expo. Santa Clara. World Expo Corp. Call: (508)879-6700.

Continued

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POMONA — L.A. COUNTY FAIRGROUNDS (FAIRPLEX)
Exit Highway 10 at Ganesha/Fairplex Drive. Go North to McKinley and turn right. Then turn left on White Avenue to Gate 14.

BUENA PARK — SEQUOIA CONFERENCE CNTR.
Take the Beach Blvd. Exit off the 91 Freeway and go 1 block North to 7530 Orangethorpe.

RESEDA — SHERMAN SQUARE ENTERTAINMENT CNTR.
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March 15, 1992 SUNDAY
Sherman Square Entertainment Center, Reseda

March 21, 1992 SATURDAY
S.D.S.U. Aztec Center, San Diego

April 4, 1992 SATURDAY
L.A. Fairgrounds (Fairplex), Pomona

April 5, 1992 SUNDAY
Sequoia Conference Center, Buena Park

SPECIAL 2-DAY SHOW!
May 16 & 17, 1992 SATURDAY & SUNDAY
L.A. Fairgrounds (Fairplex), Pomona

May 30, 1992 SATURDAY
S.D.S.U. Aztec Center, San Diego

June 6, 1992 SATURDAY
L.A. Fairgrounds (Fairplex), Pomona

June 7, 1992 SUNDAY
Sequoia Conference Center, Buena Park

June 20, 1992 SATURDAY
S.D.S.U. Aztec Center, San Diego

June 27, 1992 SATURDAY
L.A. Fairgrounds (Fairplex), Pomona

June 28, 1992 SUNDAY
Sherman Square Entertainment Center, Reseda

Calendar Of Events continued

April 6–10 Building Multi-Level Secure Systems Using Trusted DBMS, OS, And Networks Course. Los Angeles. UCLA Extension. Call: (310)825-1407.

April 7 Novell 2.15 Update Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

April 11 Computer Show & Sale. Anaheim Stadium. Computer Swap. Call: 1-800-533-7220. BBS: (415)464-6408.

April 12–15 Second International Languages Developers Conference. Monterey. Borland International. Call: CT Meeting Planners, 1-800-942-8872 or (203)261-6227.

April 13–15 Virtual Interface Technology Course. Los Angeles. UCLA Extension. Call: (310)825-1407.

April 14 Intro To LANs Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

April 21–23 The BusinessPerson's Computer Show. Anaheim. International Spectrum. Call: (617)578-3152.

April 22–23 NetCom WEST '92—Network Computing Solutions Conference And Expo. Anaheim. Information Development Corp. Call: (301)565-4233.

April 27–29 Novell 2.2 System Manager Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

April 27–May 1 Downsizing/Rightsizing Corporate Computing Conference And Exposition. Los Angeles. Boston University Corporate Education Center. Call: 1-800-733-3593.

April 30 MS-DOS For NetWare Users Course. Santa Ana. New Horizons Computer Learning Center. Call: (714)556-1220.

MAY

May 5–8 OS/2: Comprehensive Hands-on Intro Course. Los Angeles. Learning Group International. Call: Kimberly Sisson, 1-800-421-8166.

May 12–15 Intro To Datacomm And Networks Course. Los Angeles. Learning Group International. Call: Kimberly Sisson, 1-800-421-8166.

May 16–17 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-252-7927.

May 30 Computer Show. SDSU Aztec Center, San Diego. Computer Marketplace. Call: 1-800-252-7927.

May 31–June 6 Borland's Database Conference. Palm Desert. Borland. Call: 1-800-942-8872.

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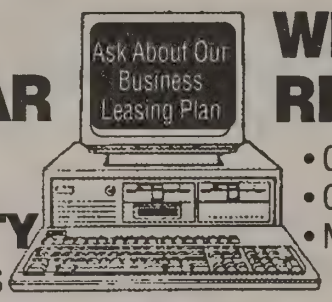

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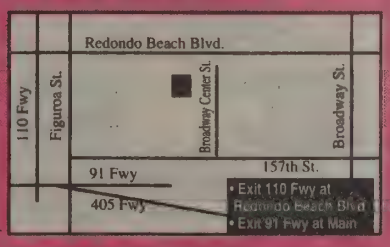

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Citizen America BBS. (213)453-7564. 8-N-1, 24 hrs., 300/1200/2400. Support for Citizen printers & computers. Sysop: Citizen America. [Exp. #93.]

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INFOmania BBS. (213)850-1627. 8-N-1, 24 hrs., 300–14,400. Compucom modem, running RBBS, Fidonet, NANET, Racenet, and RIME conferences. .QUK door for offline mail readers. Sysop: Frank Keeney. [Exp. #95.]

La Mirada's The Modems Delight BBS. (213)944-1221. 24 hrs., 300/1200/2400/9600. Multi-interest files, doors, games, and fun. Running Telegrad BBS v2.7, BlueWave Echo-mail, 1:102/430 Fidonet. Sysop: Ronald Dishon. [Exp. #95.]

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Original Apple Corps BBS. (213)454-4660. 300/1200/2400. Apple II support. Free. Sysop: Sheila Dowst. [Exp. #93.]

Out Of Space. (213)962-9428. 300/1200/2400. UFO Information Center. Sysop: Michael Dupre. [Exp. #94.]

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310

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LA Computer Society BBS. (310)475-8720. 8-N-1, 24 hrs., 2400 only. Full access to Computer Society members ($36/yr), message bases, SIGs, and club information. Sysop: Debbie Rhodes. [Exp. #95.]

The MUG BBS. (310)860-4133. 8-N-1, 24 hrs., 300/1200/2400. Tandy support group. Sysop: Walt Baird. [Exp. #93.]

Original Apple Corps BBS. (310)454-4660. 300/1200/2400. Apple II support. Free. Sysop: Sheila Dowst. [Exp. #94.]

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619

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BBSing In The Southland

By Mike Markowitz

We spotlight a different local bulletin board each month. If you'd like to suggest a particular board for this monthly profile, send information to BBS Spotlight, MicroTimes, *3470 Buskirk Ave., Pleasant Hill, CA 94523, fax (510)934-3958. Send electronic mail directly to Mike Markowitz at* mmarkowi@pepvax.pepperdine.edu *on the Internet, or* MOUSKOWITZ *on America Online.*

Orange County South Online

Stretching from Irvine to San Clemente, the booming cities of southern Orange County contain an estimated 125,000 home computer users, but most of them still haven't heard about O.C. South Online, a unique local community BBS. Like the region, O.C. South Online is business-oriented, and like the region, it has been feeling the economic blues recently.

Sysop Dick De Rose, whose career includes many years of experience in sales and marketing, started the board about a year ago. The concept is something like a hometown version of Prodigy—businesses pay a $300 annual fee for up to three screens of information, plus a range of email (public or private) and other services, which are free to users who can dial in twenty-four hours a day, seven days a week. Vendors can update their screens (standard ANSI graphics) as often as they wish. A feature called "The Pollster" lets vendors conduct online market research or surveys, automatically tabulating the results.

Current active vendors on the system include several Chambers of Commerce, health food stores, travel agencies, employment agency, computer stores, dentists, and chiropractors. De Rose is hoping to add complete movie schedules for a major theater chain and menu listings for local restaurants. Even though the recession has "killed off the demand" for all kinds of business services, the board logged over seven thousand calls between April and December.

Run from a 386 in De Rose's Dana Point home, the board has four lines and uses Galacticomm's familiar "Major BBS" software package. At present an 85MB hard drive is sufficient, but De Rose is hoping to add a CD-ROM encyclopedia, and ultimately to expand into other regions. More than a hobby, and less than a full-time business, O.C. South Online seems like a good idea waiting for the economy to turn around.

Orange County South Online

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PowerChute	CALL

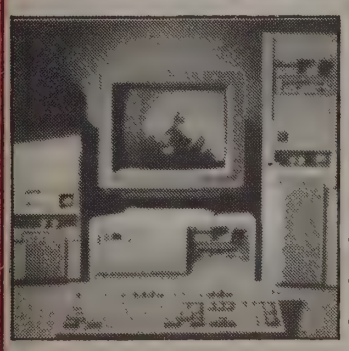
SCSI Host Adapter

Adaptec 1542BK	$270
Adaptec 1740 EISA	$555
Always IN-2000	$170
DPT SmartConnex	CALL

Cables/Accessories

RG-58 Coax (Plenum)	$0.40/Ft.
RG-62 Coax (Plenum)	$0.40/Ft.
BNC Connector - AMP	$2.50/Ea
50-Ohm Terminator	$5.00/Ea
10BaseT Patch Cable	CALL

Bdi SYSTEMS



STANDARD FEATURES:

- 64K Cache RAM (Except 386SX System)
- 4MB RAM Installed
- 3.5" 1.44MB & 5.25" 1.2MB Floppy Drive
- IDE Hard Disk & Floppy Disk Controller
- Two RS-232 Serial & One Parallel Ports
- 101 Key Enhanced Keyboard
- Bdi Serial Mouse
- MS DOS 4.01 or MS DOS 5.0

Bdi	386SX-16	386SX-20	386DX-33	386DX-40	486DX-33 ISA	486DX-33 EISA
Mini-Tower /Desktop	$640	$680	$860	$920	$1390	$2090
Tower Case	$740	$780	$960	$1020	$1490	$2190

IDE HARD DRIVE	40MB	80MB	100MB	120MB	200MB
	$200	$280	$305	$335	$585

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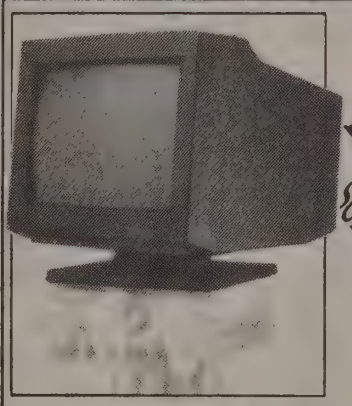

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BRYSIS 14" SVGA (OEM By PROTON)	Special Price $295
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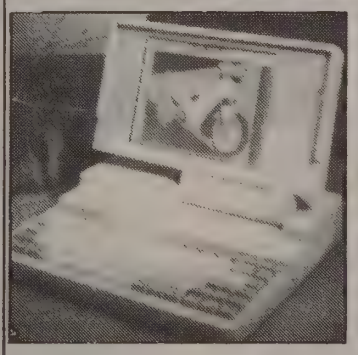
$285	$325	$345	$375	$445

Bdi NOTEBOOK PC



STANDARD FEATURES:

- 12"x11"x2.2" Ultra thin film
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- 3.5" 1.44MB Floppy Drive
- 40MB Hard disk
- 16 Gray-Scale VGA LCD Backlit Display
- Two RS-232 Serial & One Parallel Ports
- Full function keyboard
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- External VGA connector
- External keyboard connector
- Carrying bag
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- FCC Class "B" Approved

NOTEBOOK PC	286-16	386SX-16	386SX-20
BASE SYSTEM	$1395	$1495	$1595
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Options:

Ni-Cd Battery Pack	$95
External 5.25" Floppy Drive	$250

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All system prices are quoted without shipping, taxes, COD or other special fees.
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BULLETIN BOARDS

online CD-ROMs of IBM and GIF files. Free, easy first call access. Sysop: Ed Golka. [Exp. #95.]

Lynzie's Motherboard. (714)776-4198. 8-N-1, 24 hrs., 300/1200/2400. 32 lines, multiuser/group & private chats, email, public forums, local social events, over 800MB online. More local numbers available online. Sysop: Lynzie Flynn, [Exp. #93.]

Midnight Mission BBS. (714)848-6808. 24 hrs., 300–14,400. Large game and GIF file areas. Full access with call back. Sysop: Marty Strech. [Exp. #95.]

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Pleasure Island. (714)952-8910. 24 hrs., 1200–38,400. Using PCBoard, 1GB of online files/net-mail. Adult access available. [Exp. #94.]

SOCCC BBS. (714)832-8249. 8-N-1, 24 hrs., 300/1200/2400. Public domain & shareware for IBM, Apple & CP/M. Sysop: Brian King. [Exp. #94.]

WinSIG BBS. (714)363-9802. 24 hrs., Windows 3.xx shareware. Sysop: Firas Bushnaq. [Exp. #94.]

805

Lynzie's Motherboard. (805)482-5776. 8-N-1, 24 hrs., 300/1200/2400. 32 lines, multiuser/group & private chats, email, public forums, local social events, over 800MB online. More local numbers available online. Sysop: Lynzie Flynn. [Exp. #93.]

Modem Butterfly's Connection. (805)581-0700. Intelligent fun, chatting, events, software, contests. [Exp. #95.]

Mount Olympus BBS. (805)297-5787. 24 hrs., 1200–14,400. 700MB online, adult oriented, GIFs, text files, online games, email, alt. lifestyles. 18+ verification req. [Exp. #95.]

818

Americom. (818)967-3108. 8-N-1, 10 pm–8 am, 300/1200/2400. Special areas for Laserdisc/Video information, HAM/SWL/SCAN, large text library. [Exp. #94.]

A Tin Shack BBS. (818)992-3321. 300/1200/2400. For college students and staff, multiline, all computers. Sysop: Guy Norenberg. [Exp. #93.]

Audiophile Network. (818)988-0452. 8-N-1, 300/1200/2400. Serving the Hi-Tech Audiophile & Vidphile since 1984. Forums, classifieds, and database. [Exp. #95.]

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ASSOCIATIONS

Black Data Processing Assoc., LA Chapter. Meetings: 4th Tues., 6:30 pm, ULTC, 7226 S. Figueroa St., Los Angeles. Call: (310)673-6522 or 1-800-727-BDPA. [Exp. #97.]

CALPA—California American Legion Press Association. 4774 College View Ave., Los Angeles, 90041. Call: (213)257-7179. Group of Editors of American Legion publications. [Exp. #94.]

FASCAL—Filipino American Society For Computer Activities And Literacy. Meetings: 2nd Sat. of alt. months, 1–4 pm, LA Midtown Hilton. Annual dues $20. Write: PO Box 3913, Chatsworth, CA 91313. [Exp. #94.]

Independent Computer Consultants Association, Los Angeles Chapter. Meetings: 1st Thurs., 6:00 pm, Proud Bird Restaurant, 11022 Aviation Blvd., Los Angeles. The LA chapter provides referral services. Call: (213)872-1811. [Exp. #96.]

Independent Computer Consultants Association. Meetings: 1st Thurs., 6:00 pm, McGuire's Restaurant, 8232 DeSoto Ave., Canoga Park. The LA chapter provides referral services. Call: (213)872-1811. [Exp. #93.]

Orange County Association Of PICK Professionals. Meetings: 3rd Wed. Dinner: Members, $20; Non-members, $25. Without reservations add $5. Call: (714)641-6347. [Exp. #94.]

The Software Council Of Southern California (SCSC). Meetings: Last Wed., 6:00 pm, Long Beach Airport Marriott, 4700 Airport Plaza Dr., Long Beach. SCSC was founded to further the interests of software development organizations, as well as companies that provide support and services to the local software industry. Call: (310)328-0043. [Exp. #98.]

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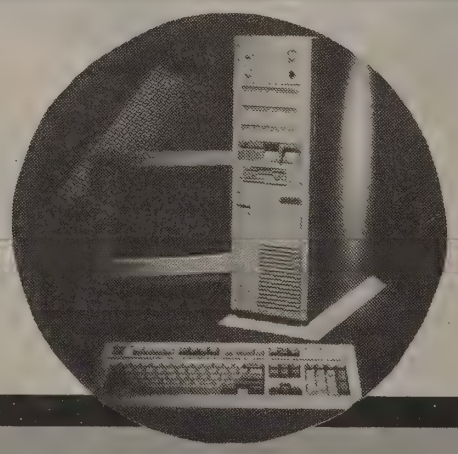

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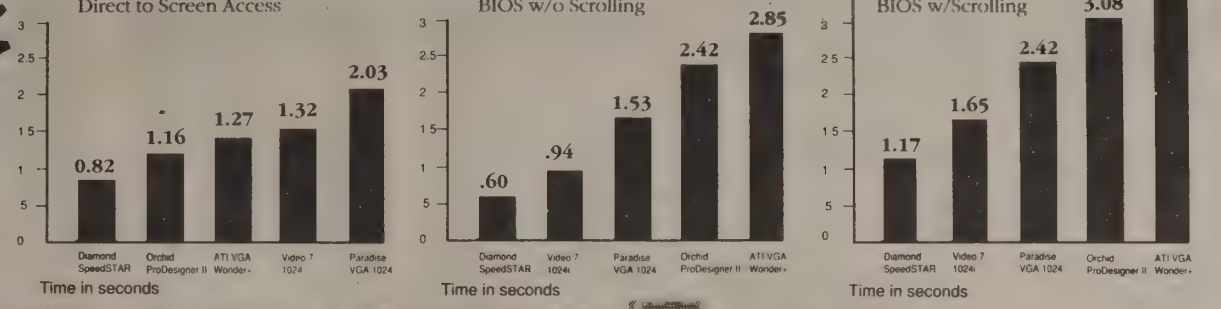

Tests performed on a Micronix 386/DX25MHz, non-cache PC with shadow ROM disabled

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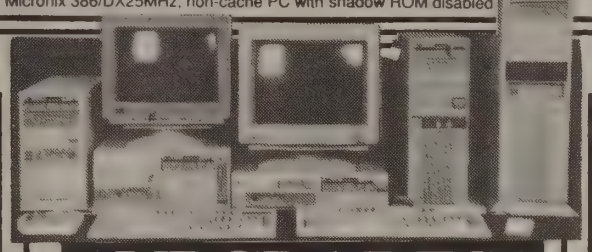

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USER GROUPS

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LAAUG—Los Angeles Amiga User Group. Meetings: 3rd Wed., 7:30 pm, Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Many SIGs, rookies, monthly PD disks. Call: Kip Hammond, (310)390-3010. [Exp. #94.]

APPLE

Original Apple Corps, Apple II User Group. Meetings: 2nd Sun. Support for beginners through experts. Write: PO Box 90065, Los Angeles, CA 90009. Call: Fred Duffy, (310)475-8400. BBS: (310)454-4660. [Exp. #96.]

ATARI

ATESIG—Atari 8-bit SIG. Meetings: 145 Surf Pl., Seal Beach. Cooperative group for Model Railroad applications. Call: (310)430-5433. [Exp. #93.]

RAM Atari ST User Group Of Ventura County. Meetings: 3rd Wed., 7:30 pm, Call: Tim McCoy, (805)389-0059. [Exp. #97.]

South Bay Atari Computer Enthusiasts. Meetings: 2nd Tues., 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd. Active since 1985, novices & all skills welcome. Call: (310)375-4839. [Exp. #97.]

CAD/CAM

Los Angeles Area AutoCAD User Group. Meetings: 4th Wed., 6:30 pm, Burbank Board of Realtor's Bldg., 2006 W. Magnolia Blvd., Burbank Meetings feature tutorials, Q&As, demos, hands-on, BBS, and newsletter. Call: M. Berman. (818)762-9966. [Exp. #96.]

COMMODORE

C128 West Commodore 128 User Group. Meetings: Covina & Santa Monica. Free membership. Large disk library. Call: John, (818)331-1589; Paul, (818)892-3859; BBS (714)598-1755 FidoNet. [Exp. #96.]

Commodore Helpers Of Long Beach. Meetings: 2nd Sat., 9:00 am. St. Timothy's Lutheran Church, Woodruff and Arbor in Lakewood. Supports 64/128 models. Call: Tom Hoy, (310)424-0508. [Exp. #94.]

C-TUG (Commodore Technical User Group). Meetings: Western Federal Savings and Loan, 2233 N. Tustin Ave, Orange. Speakers, demos, help with any Commodore and Amiga questions. Call: Lou Palush, (714)532-1802. [Exp. #93.]

Orange County Commodore Club. Meetings: 4th Sat., 11 am, Fidelity Federal Bank, 19900 Beach Blvd., (Newland Shpg Ctr) Huntington Beach. Call: Mike Moore, (714)668-9715. [Exp. #96.]

South Bay Commodore Users Group. Meetings: 3rd Thurs, 7:00 pm. SEC Redondo Generating Station, 1100 Harbor Dr. (across from King Yacht Harbor). Free and open to all who use or own Commodore computers and to those who would like to receive or exchange information on programs, applications, or hardware. Call: (310)324-8357. [Exp. #97.]

DESKTOP PUBLISHING

Southern California Ventura Publisher User Group (SC–VPUG). Meetings: Last Tues. and Thurs., 7:00 pm, Tues. in Glendale, Thurs. in Culver City. Product demos, Q&As, library resources. Call: (818)955-5830. [Exp. #97.]

EPSON

SFV & LA Epson QX User Group. Meetings: 3rd Mon., 7:30 pm, The Meeting Place, Fallbrook Mall, Canoga Park. Call: Bill Winter, (818)347-7417. [Exp. #93.]

IBM & COMPATIBLES

Channel Islands PC User Group. Meetings: 2nd Sat., 9:30 am, Camarillo Community Center, 1605 Burnley St., Camarillo. Meetings feature help session, software/hardware demos, and more. $20/yr. Visitors welcome. Call: Bob, (805)983-4741. [Exp. #93.]

Computer-RAP Club User Group. Meetings: 3rd Tues., 7:00 pm, 730 Pine Ave., #411, Downtown Long Beach. Call: (310)436-8944, between 6:30 pm–9:30 pm. [Exp. #93.]

Greater South Bay PC User Group. Meetings: 2nd Thurs., 7:30 pm, Christ King Lutheran, 2706 W. 182nd St., Torrance. Visitors welcome. Call: (310)542-4996. [Exp. #96.]

Long Beach IBM PC And Compatibles User Group. Meetings: 3rd Wed., 7:00 pm, Los Altos Methodist Church, 5950 E. Willow St., at Woodruff. Novices and experienced welcome. BBS, PD library, newsletter, and SIGs. Call: Jim Wells, (310)439-7114. [Exp. #97.]

Los Angeles Computer Society. Meetings: 2nd Tues., 7:00 pm, Culver City High School Cafeteria. Meetings are free and there are always live presentations and giveaways. Call: (310)473-6668. [Exp. #97.]

NOCCC. Meetings: 1st Sun., Chapman College. Call: (714)998-8080. [Exp. #94.]

Pasadena IBM User Group. Meetings: 3rd Wed., 6:30 pm, Huntington School, 1700 Huntington Dr. Speakers on hardware/software, SIGs, BBS, library, and newsletter. Call: Steve Bass, (818)795-2300. [Exp. #96.]

South Orange County Computer Club (SOCCC). Meetings: 3rd Thur., Westminister Community Center. IBM, Apple, CP/M. Vendor presentations, newsletter, etc. Membership: $12 single; $14 family. Call: (714)531-0376. [Exp. #94.]

Thousand Oaks Personal Computer Club (TOPCC). Meetings: 4th Thurs., 6:30 pm, Goebel Senior Adult Center, 1385 E. Janss Rd., Thousand Oaks. Call: (805)496-9699. [Exp. #98.]

Valley Computer Club. Meetings: 1st Wed., 7:00 pm, Burbank Board of Realtor's Bldg., 2006 W. Magnolia, Burbank. BBS, PD library, SIGs, newsletter. All welcome. Call: (818)842-3707 or (213)227-9684. [Exp. #96.]

Ventura PC User Group. Meetings: 3rd Sat., 9:00 am, Poinsettia Pavilion, Canada Larga Rm., 3451 Foothill Rd., Ventura. Guests welcome, no charge for attendance. Call: Kenn Ritza, (805)644-6955. [Exp. #98.]

VICUG (Valley IBM/ Compatibles User Group). Meetings: 4th Fri., 7:00 pm, Security Pacific Bank, 14801 Ventura Blvd., Sherman Oaks. Membership fee $25/yr or $3 at the door. Call: Harry Tischler, (818)997-1470. [Exp. #93.]

VICUG—DTP (Valley IBM/ Compatibles User Group—Desktop Publishing). Meetings: 1st Fri., 7:00 pm, Union Federal Savings Bank, 13330 Ventura Blvd., Sherman Oaks. Membership fee $25/yr or $3 at the door. Call: Harry Tischler, (818)997-1470. [Exp. #93.]

KAYPRO

West Los Angeles Kaypro User Group/KAYOS Kaypro User Group. Meetings: 4th Mon. of even months, 6:30 pm, El Segundo. Call: Margot, (310)379-8339. [Exp. #94.]

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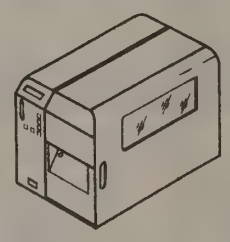

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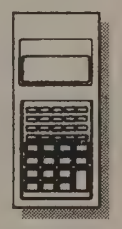

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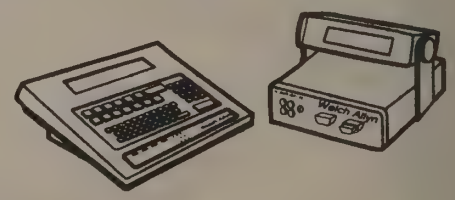

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What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

USER GROUPS

K-MAN

Southern California KnowledgeMan User Group. Meetings: 1st Wed., 7:00 pm, Honda North America, Bldg. 300, 700 Van Ness Ave., Torrance. Call: (213)662-9910. [Exp. #97.]

MACINTOSH

The American Film Institute Mac User Group (AFIMUG). Meetings: 2nd Mon., Apple Lab, AFI, Hollywood. TV, film, and video. Call: Dave Chadderdon, (213)856-7743. [Exp. #97.]

MacValley User Group. Meetings: 1st Wed., 7:30 pm, Wilkinson Senior Center, 8956 Vanalden, Northridge. Meetings, new product demos, newsletter, PD and shareware software, and more. Membership dues, $30/yr. Visitors welcome. Call: Bob Campbell, (818)784-8666. [Exp. #96.]

San Gabriel Valley Mac Users Group. Meetings: 1st Thurs., 7:30 pm, Pasadena Central Library Auditorium. Call: (213)684-ICON. [Exp. #97.]

West Orange County Macintosh User Group (WOCMUG). Meetings: last Tues., 7:00 pm, F&M Bank, Rossmoor Shopping Center. Visitors always welcome! Call: (310)493-1240. [Exp. #93.]

Whittier Area Mac User Group. Meetings: 2nd Sat., 10:00 am, Granada Heights Friends Church, La Mirada. Call: (310)947-2447. [Exp. #97.]

NeXT

Southern California NeXT User Group. Meetings: throughout LA County. Call: Mike Mahoney, (213)985-1550 or Bob Desharnais, (213)343-2056. [Exp. #93.]

TEXAS INSTRUMENTS

TI/944A Home Computer User Group. Meetings: 2nd Mon., 7:00 pm, Pomona First Federal, 9090 Central Ave., Montclair. Monthly newsletter, demos, and fairware. Call: (714)627-3403. [Exp. #96.]

THEOS

THEOS User Group. Call: Fred Bellemy, (805)965-0265. [Exp. #94.]

UNIX

UNIX User Association Of Southern California. Meetings: 2nd Mon., 7:00 pm, New Horizons Learnings Center, 1231 E. Dyer Rd., Santa Ana. Call: Vince, (714)556-1220, ext. 126. [Exp. #94.]

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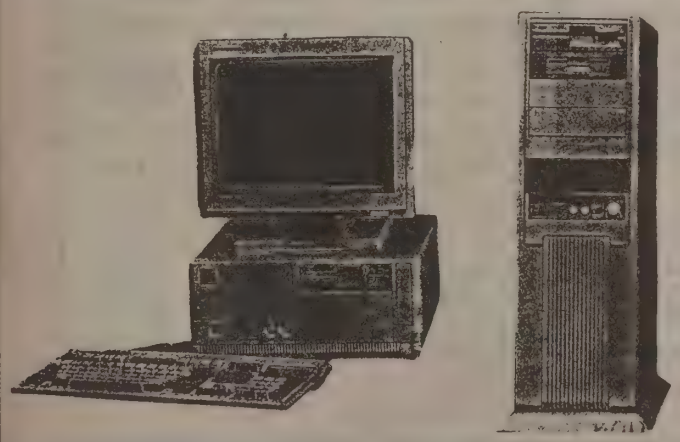

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Continued from page 34

with the Links tool. If the database doesn't exist, ObjectVision can help you create one. Links to multiple databases are permitted and are usually necessary. In this case, Nances has the top part of the customer information form linked to the customer database, while the repeating information is linked to the Stay information database.

You can set up your database to do automatic updates whenever something changes, including updates to related items in the table objects. You can also establish how the application will search for indexed items (i.e., find an exact match only, find the closest match, etc.). Each of the options is useful under different circumstances. Finding an exact match lets you determine whether a record already exists, and if not, add it. The closest match option will find whatever record matches your input most closely, but you can't add any new records with this option selected. This is ideal for environments where the users are only allowed to query the database, not update it.

Filters play a very important part in the Nances database and the Links tool also lets you set up filter expressions so that only records matching the selection criteria are available. After connecting a link, ObjectVision will even automatically create the buttons (and the Event trees) for moving through the database (i.e., Next, Previous, Top, etc.).

AT WORK WITH OBJECTVISION

As mentioned earlier, ObjectVision is not capable of performing every task required, but does allow you to call other programs. ObjectVision is limited in its reporting capabilities. It can't print mailing labels or columnar reports. However, there are a number of mailing label packages that can work from a dBASE database. At Nances, Bear Rock Labeler works quite well, and ObjectVision lets you run another application from a menu or button. It would be better if it had label-printing capabilities built right in, and the staff at Nances would not have the burden of learning an additional program. Borland is aware of this shortcoming and is looking at improving the reporting capabilities of the product.

One of the advantages ObjectVision has over other dBASE front-ends is the ability to link to multiple relational databases and to set up one-to-many relationships.

The Nances Customer Database performs its functions well, according to Manager Sarah Wright. "It enables Nances to keep track of our customers and provide even better service to them. We initially had some trouble getting used to the computer, but we have adjusted to it nicely and our routine includes entering all the customer data into it on a regular basis." Still, they don't quite trust the newfangled computer yet—Nances still keeps its paper records of when people stayed there, just in case—even though a whole year's worth of data, when compressed, will fit on a 3.5" disk. Oh well, in a town as old as Calistoga, you need to take one step at a time. ■

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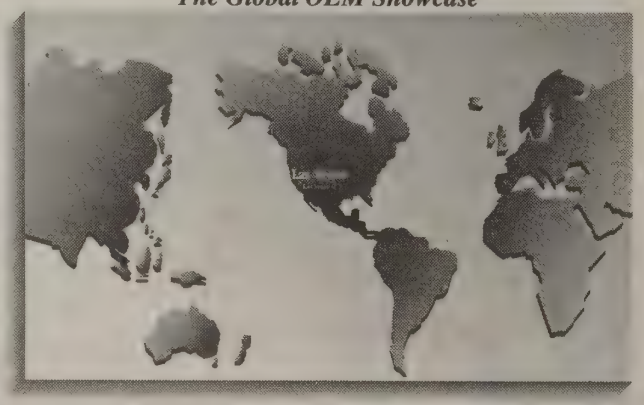

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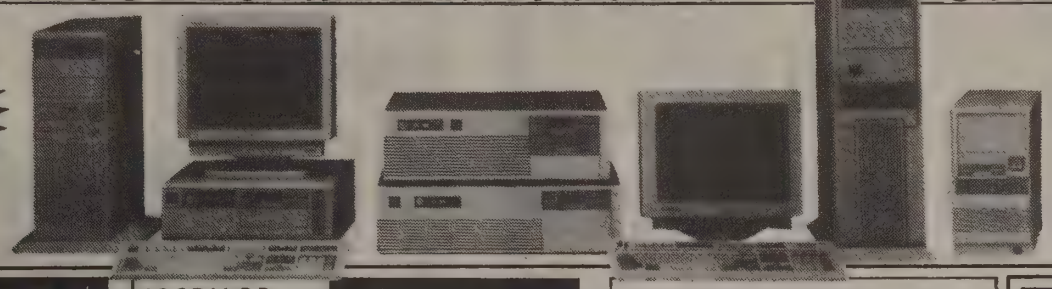

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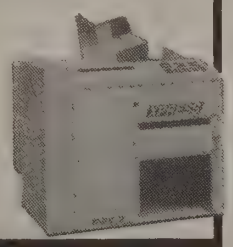

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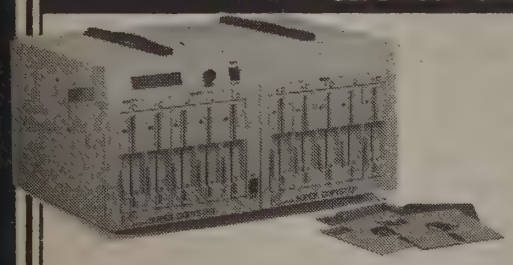

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For most beginners, a good integrated software package will provide 90% of what you need for less than half the cost of buying three or four separate applications.

Continued from page 42

available (16 or 81) depends on your Control Panel setting.

The database resembles FileMaker Pro. The spreadsheet resembles Excel or Resolve. Seven different types of 2-D charts can be generated simply by highlighting a range of spreadsheet cells and clicking on a few simple options.

The Communications module provides for Log-on macro recording, which is not nearly as useful as a full scripting language, but it certainly helps. The communications module is preset for VT102 terminal emulation and XMODEM file transfer, but there are extensive options for customizing the settings.

The HyperCard-based Help system is very good and documentation is excellent. For example, the Communications Handbook provides a very clear explanation of how to use a null-modem cable to directly connect two computers' serial ports to transfer files.

BEAGLE WORKS

Beagle Bros. of San Diego has been the leading publisher of add-on modules for AppleWorks. The long-delayed **BeagleWorks** is their first major venture into Macintosh software. When it ships, it will be the first integrated Macintosh software package with full System 7 functionality, including Publish and Subscribe (Apple's way of linking changes in an original document to copies of that document even in other applications or over a network). Requiring only 1 MB of RAM, the program also runs under System 6.

The program uses a Tool Bar that looks like a long, narrow floating palette. Text can be automatically wrapped around an irregularly shaped graphic (a feature commonly found only in page layout programs). The paint and draw modules support up to 256 colors.

BeagleWorks includes seven modules: word processor, database, spreadsheet, chart, paint, draw, and communications. Information on file import/export capabilities was not available in time for this review.

BeagleWorks will have a list price of $299, but owners of AppleWorks 3.0, AppleWorks GS, Microsoft Works, and certain other programs are eligible for a $99 upgrade offer.

SUMMARY

Integrated software is a good option for those who are repelled by the high cost of full-featured software, overloaded with esoteric features most users will never touch.

Before deciding on a package, you should be sure that it supports the particular file formats your environment demands—for example, if you have to exchange data with people who only use dBASE or WordPerfect on MS-DOS systems. A skilled accountant could probably do very good income tax work with the low-end spreadsheet in an integrated package, but most users would do much better with one of the many specialized, up-to-date tax programs.

For most beginners, a good integrated software package will provide 90% of what you need for less than half the cost of buying three or four separate applications. When you hit that other 10%, you'll be on the way to power userhood (and you will probably have outgrown your first computer). ■

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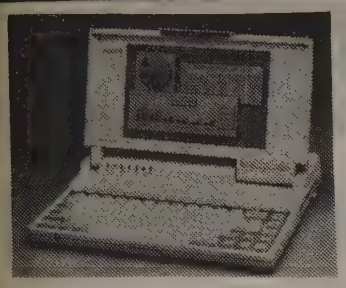

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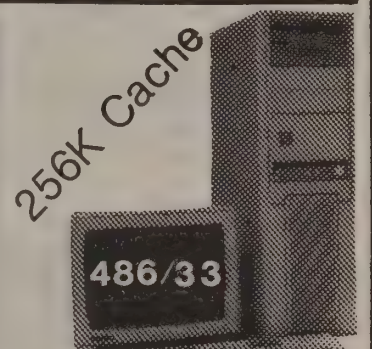

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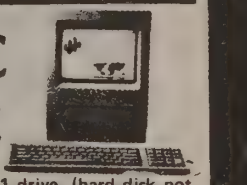

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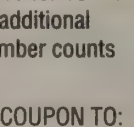

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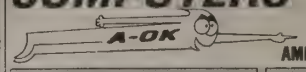

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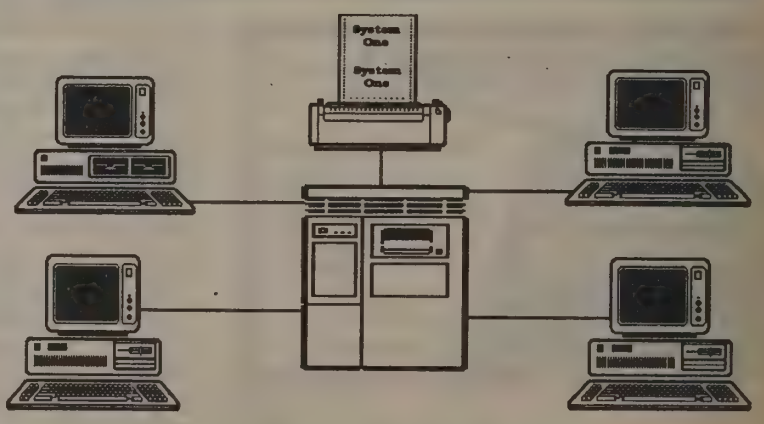

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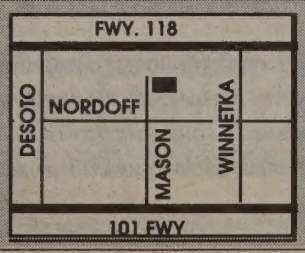

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The Bill Gates Story—ACT II

BY JOHN C. DVORAK

Scene: offices of Microsoft Corporation, Redmond, Washington. Bill Gates is sitting behind his desk, feet up on the desk, arms behind his head looking at the glowing monitor. Steve Ballmer swings open the door and barges in.

BALLMER: Billy, wake up. What are you watching, man?

GATES: Mandelbrots. Do you know that if the iteration of each Mandelbrot calculation was a penny and our gross profit margin is factored in, there is no reason that...

BALLMER: Hey, we've already gone over that. There's no time for this. All hell has broken loose. The media are pounding on the door wondering why Hallman was fired.

GATES: Fired? I thought he quit. What was it that he did?

BALLMER: He was the President. Don't you remember? You then made me and a couple of other of your pals into kind of a junta to run things.

GATES: Ah, yes. We couldn't get Sculley. Is he still in the office?

BALLMER: Sculley? Heck, yes.

Ballmer pulls the door wide open to reveal the waiting room where Sculley is bouncing around on a pogo stick holding the stick with his right hand and waving a red cowboy hat in the air with his left hand.

GATES: I see. Hmmm, I wonder what we should do with him.

BALLMER: Let's put him in the lock-up and torture him like we do with all the programmers who have failed us in our effort to rule the software world.

GATES: An interesting prospect, but I hear that his office in Cupertino isn't much different from our torture chamber. Put him in the cave of horrors. You know, where we put salesmen who don't make quota.

BALLMER: Are you sure you want to be that extreme?

GATES: Are *you* questioning *my* authority? *[pushes button on desk]*

Suddenly a large probe rises behind Gates and Ballmer turns ashen white. Before he can say anything, an enormous electrical discharge blasts Ballmer right in the face. Ballmer drops to his knees with a moan.

GATES: Sorry, Steve, you know the rules. You can't talk back to me, ever. My conditioned response electro-probe is what makes this company the biggest company in the world. We have to be on the same team. My thoughts have to be your thoughts. I've brought you into this company and made you a rich man. It's time you gave something back. Ever since you invented the big box theory you've coasted. You have to contribute more. This doesn't mean back talk. It means agreement with me.

BALLMER: Yes, sir!

GATES: That's better. Now I want you to see something.

Gates picks up a remote control device from his desk and aims it at the wall and clicks it. A panel opens and out walk three exact copies of Steve Ballmer. He clicks on another panel and out walk three exact copies of Bill Gates.

BALLMER: What the....!!

GATES: My hobby. As many have suspected, I've been trying to clone myself for over a decade. You've seen some of the attempts walking around the company. Lookalikes. None have been perfect so I just turned them over to the marketing departments and gave them jobs. I'll probably have to destroy them sometime soon. With these clones I won't have to worry about people making stupid mistakes or disagreeing with me.

BALLMER: Why clone me?

GATES: They only look like clones of you. They have the same superior brain that my clones have. The same superior brain I have! Hahahahahaha. Nothing can stop me now. And you, Mr. Ballmer, are now expendable.

BALLMER: Not on your life!

Quick as lightning Ballmer pulls out a handgun and blasts Gates with six shots to the chest. Gates falls back into the chair. Suddenly one of the Gates clones pulls out a pistol and shoots the gun out of Ballmer's hand

NEW GATES: I thought you'd do that. That was a clone you shot. I'm the real Bill Gates.

Each copy of Gates repeats the phrase "I'm the real Bill Gates." A new panel opens up revealing a dozen more Bill Gates clones. They all say they're the real Gates.

NEW GATES: Ballmer clone number two, take this man to the cave of horrors and throw him in there with Sculley!

BALLMER: No, no! Anything but that! Please no!

Ballmer is carried out by a Ballmer clone and the New Gates motions the other Ballmer clones out of the room. They stand at the door like guards. The new Gates then speaks to the assembled Gates clones.

NEW GATES: Now, gentlemen. We can simultaneously work together. We can be at more than one place at the same time. We can pool our enormous brain power. You each must remember who you are, though. You are clones of me. If you begin to think that you are really me and not a clone, squeeze your right earlobe and you'll feel a little button that lights up the ear as a way of identifying you to other members of the group.

Each clone pinches his earlobe and his ear lights up a light red color.

NEW GATES: Now when I do it... *[demonstrates]*

The clones simultaneously gasp as the ear of the new Gates lights up like the rest of them. The new Gates quickly turns to look into the large mirror behind the desk to see that his ear is brightly lit. He looks down onto the chair where the original Gates sat. He reaches down and pinches his ear. It lights too!

NEW GATES: Oh my god!

Just then Ballmer walks in with his three clones. He is laughing wildly.

BALLMER: Well, well. I see my inventions worked. And you've all been fooling yourselves. I have been running things from the beginning. Bill hasn't been here for years. The one clone that I shot was defective anyway. Too mechanical. He's been posing as Gates since 1982. Now I think I got it right. Gentlemen, the world is ours. Password: Takeover!

ALL CLONES: Hail Ballmer! Hail Ballmer!

BALLMER: Excellent. Hahahahaha! ■

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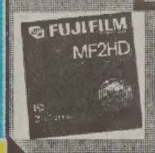

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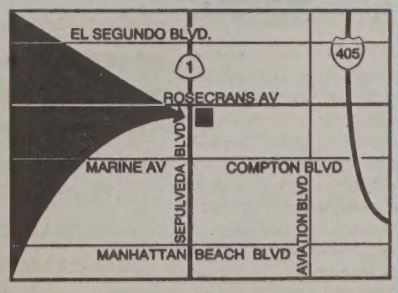

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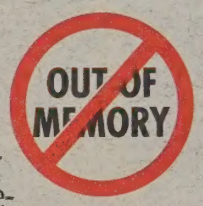

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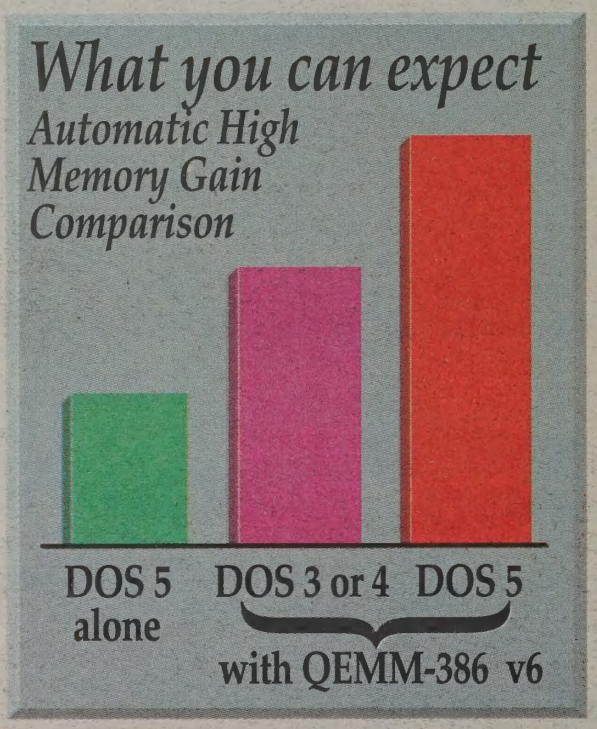

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